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Art. I.—*Observations on Cerebral Auscultation.* By S. S. Whitney, M. D., of Newton, Mass.

Whenever new doctrines or new theories are held up for public consideration, whatever relation to science they may seem to bear, their declaration should be received, only after a most rigid and careful examination of the principles upon which they are based. The progress of science and sound philosophy need no other, and should sustain no other material within its noble superstructure, than that which has passed the *severest test* of experiment and of fact. Could the real interests of science be promoted by any other, or by more partial means, even then a proper respect for the usages of age, and for opinions which have been long received and entertained, would seem to allow of no milder alternative.

Yet, on the other hand, a too obstinate and inflexible adherence to doctrines, because they bear the "impress of age," would as certainly retard the progress of true philosophy, as that laxness of reason, which would allow every induction of sense to be counted of equal weight to the most obvious and practical truths. So far, therefore, as the means are within our reach and can be made available, every thing relating to science or philosophy, should be made as plain and unequivocal as experiments and matters of fact can render it.

Perfect precision, in investigating the causes of phenomena which are continually varying, is not easily attained; and although we may not expect every science to be made an "exact science," nor every phenomenon to be as constant and unalterable in its phasis as the "nine digits" of enumeration, yet we *are* to expect that out of the confused and huddled mass of phenomena which ages of conjectural observation have *scrambled* together, a more

sincere and enlightened regard for its true object will discover and arrange the elements of a purer and more chastened philosophy. This, indeed, in many instances, has already been accomplished; and whenever the period shall arrive, in which it shall become universal in its application, a new and important era will have dawned upon every branch of science: but upon none a brighter, and one of more importance in its application, than upon that which is so intimately connected with the physical constitution of man; for over none, has fancy thrown such a complicated and inexplicable network of theory, conjecture and strange deductions of sense, as it has over that branch of philosophy which should discover to us the true pathological and physiological principles of the human body.

In the perfectly healthy and normal conditions of the organs of the human body, every one has, in its structure, functional and local developments, something in which it is peculiar, and which is characteristic of itself. This is an axiom in physiology, which has been too long received, and is too obvious to admit of doubt. It is equally true, if not so universally admitted, that any derangement or deviation of these organs from their natural condition, is manifested by signs which are peculiar and characteristic of such deviation. It may, therefore, be laid down as a principle of pathology, that every disease is marked by *some sign* which is pathognomic of its real character; something in which it is unique; something, in respect to which it is unlike, and by means of which, it is signalized from all other diseases.

In many, perhaps in a majority of cases, these characteristic features of disease are well defined and easily recognized, and the phenomena which accompany them are plain and well marked, while there are other cases, in which every thing is obscure, confused, scarcely able to be comprehended, and still less to be appreciated. Still the existence of such peculiarities *is none the less real*, because they are not so easily recognized.

In many diseases this peculiarity is manifested by the development of a single and unequivocal phenomenon. In many others, by a variety or series of phenomena, all of which are positive and perfectly distinct. In others again, this peculiarity only manifests itself through phenomena which are purely negative, and there are still others, in which we are only able to distinguish them from those of a similar character, by the different *shades* of their similar phenomena. Hence the extreme difficulty, in frequent instances, of arriving at a perfect and correct diagnosis of disease, and the occasion of the various and conflicting opinions which oftentimes arise in regard to the one and the same object. It is the little and foolish things in these cases, which too often confound the wise, and in the search after pathological truths, "the less weighty matters of the law" are too apt to be overlooked for its "more signal and manifest display."

Such is the case, particularly, in regard to the means which have been most relied on, in diagnosticating the various affections of the brain and appendages. The question, here, has been, not what the lesion actually

was, but what, in the end it would prove itself to be; and the feeling of anxiety has been, not so much to forestall the development of particular symptoms, as to see to what *end* such symptoms might eventually lead.

The fact is, just in proportion to the minuteness and accuracy of the knowledge which we possess, of the relations and the sympathies which exist between one organ and another, and of the healthy and due performance of the functions of those organs, just in that proportion shall we be able to decide upon any departure of those organs from their legitimate state.

At the present moment, it must be confessed, diseases of the brain are to be regarded as not only the most difficult, but as the most obscure class of lesions in the great nosology of man. A little more than a quarter of a century ago, when fancy built her hypotheses and conjecture in a degree took the place of observation and fact, before the new revelation had been made to science by means of such physical signs as are brought to light by auscultation and percussion; the same remark, with equal truth, might have been applied to diseases of the heart and lungs. But now, so far from this being the fact, the very reverse is indeed the truth, and instead of being the "most difficult" and most obscure, diseases of the heart and lungs, with the grand rationale of physical signs by which they are elucidated, are as easily recognized, and with as much certainty and precision defined, as the most simple lesion of the human body; and this too, apart from the ancient régime of rational signs, by which we have been wont to investigate disease.

It was the remark of a distinguished pathologist, "that the nature of the organs within the thorax and their disposition, render it almost impossible, that physical signs should ever be of any avail in developing the nature and character of these diseases;" and yet how wide from the truth has the sequel of a few years proved this opinion to be.

Instead of their disposition within the thorax, and the structure of these organs, offering any hindrance to the application of the natural principles of philosophy to them, an apparatus could scarcely be devised, which, by its disposition and structural arrangement, could more correctly, and with as much simplicity, demonstrate the principles of hydraulics and pneumatics, as the heart and lungs. And singular as it may appear, long after the art of auscultation and percussion had survived its infancy, not a few were to be found, to whom the possibility of detecting and distinguishing diseases in the chest, one from another, by means of a purely mechanical process, was a chimera, too absurd to merit a moment's consideration; and yet with all the objections which have been urged so unfairly against it, and the hindrances which prejudice and envy have opposed to its progress, the rapid advances which it has made, and its now almost universal acceptation, is a most signal triumph of the truth of the adage, "magna est veritas, et prævalebit."

It has also been asserted, "that there are no physical signs applicable to

the brain, and from the circumstances in which the organ is placed, it is to be feared that none will ever be discovered."

It is indeed true, "that there are no physical signs applicable to the brain," such as are dependent on a cause similar to that of the act of inspiration and expiration of the lungs, or perhaps of the systole and diastole of the heart, while in their healthy state; for the brain, in its normal condition, can of itself develope no physical phenomena. The thing is incompatible with a physiological state of the organ.

There are, however, certain conditions of the brain, in which a new order of things has been discovered to take place; and the very fact that it is known, and can be shown to exist *only* in certain derangements of that organ, while in its physiological condition, signs which are purely negative in their character are developed, proves the former to be, not only a physical sign, but a sign which is most surely pathognomic of some derangement of the organ itself.

Such then, being the case, can it be shown that the organs within the cavity of the cranium are "so disposed" as to render the art of auscultation or percussion in any way available, and that these physical signs are applicable to the brain? The very thought ought to commend itself to the consideration of every true lover of science.

Heretofore, and even at the present moment, the diagnosis of diseases of the brain rests solely upon the plausibility of physiological and pathological induction. But inductive signs are known to vary, and to vary exceedingly in organs of the most simple structure, from the force of the slightest variation of circumstance. How infinitely more complex and variable then, must they be when dependent upon the mere breath of circumstance, over an organ of such exceedingly complex structural organization, as that of the brain! Yet in regard to this organ, although we may never, perhaps, attain to that degree of precision, I might say physical certainty, which has been attained, in regard to diseases of the organs of the thorax, may we not rationally anticipate, that, with what industry and perseverance can accomplish, and with what may be accomplished by a newer and more rational method of investigating its diseases, our knowledge may be as certain, and our diagnosis of the diseases of the brain, in a degree, may be made with as much precision, as that of the heart and lungs?

If, indeed, such a hope is held out to us, is the duty not an imperative one, that when we enter upon the investigation of a class of diseases, so numerous in their relations, and so important in their results, as those of the brain, it should be done with a boldness which nothing can intimidate, while at the same time we watch with a jealous eye, every thing which would tempt us to overreach the bounds of well-ascertained and well-established facts? And if by any means, whatsoever they may be, we may be able to reduce and simplify the phenomena of disease, to discriminate between the real and apparent signs, and to set a mark upon those *particular*

ones which look out from amidst the surrounding darkness, as beacon-lights, to warn us of the dangers which are at hand, so far do we elevate and extend the limits of that science, which, in its beneficence, would embrace every member of the great family of man.

Such were some of the reflections indulged in, after having read, a number of years since, some observations upon a new method of exploring the diseases of the brain. I mean that of "cerebral auscultation."

A summary notice of the *discovery* of a new auscultic phenomenon, as connected with certain diseases of the brain, and a brief résumé of its most prominent features, was first made by the author of the above-mentioned "observations," to the Boston Society for Medical Improvement, in the summer of 1833. Further observations were made, and a more extended view of the subject was subsequently communicated to the same society in March of 1838. The same paper was published the following August, as the readers of this Journal will recollect, under the title of "Observations on Cerebral Auscultation, by J. D. Fisher, M. D. of Boston."

I was particularly struck at that time with the observations contained in that paper, in consequence of my attention having been directed to the subject of the lesions of the great nervous centre, from reading the researches of Abercrombie, MM. Lallemand, Rostan, and some others of the more notable French writers upon this subject. Since that time I have noted as well and as accurately as circumstances would admit, every incident worthy of notice, which would tend to throw any further light upon the subject of cerebral auscultation.

The cases which I shall hereafter describe, have been those, with a single exception, which have occurred within my own practice, and from having had a frequent opportunity of seeing them, day after day, under every variety of condition and circumstances, I can certify to the accuracy and truthfulness of the details.

In a strictly physiological state of the brain, as has already been observed, no physical signs are developed, except such as are dependent on causes which are extraneous in their operation to any of the functions of that organ; such, for instance, as the sound of respiration, of deglutition, the sound of the voice and heart as heard through the medium of the brain.

There are, however, other sounds which are manifest only in certain pathological conditions of the brain, and which are dependent upon causes within the brain itself. These are the physical signs so far as they are known, of certain diseases of the cerebral organs, and as such they will hereafter be spoken of. Before entering upon the history of these last-mentioned symptoms, it may be proper to say a few words, first, in regard to the normal cephalic sounds. For a more particular and detailed account of these sounds the reader is referred to the article on "Cerebral Auscultation," in the August No. of this Journal for 1838.

In auscultating the heads of healthy children, four very different and per-

fectly distinct bruits, are heard passing through the brain. They are evidently the sounds which are produced by the act of respiration and deglutition, by the impulse of the heart and the voice.

The one which first attracts the attention, is that which is produced "by the impinging of the air against the walls of the nasal cavities during the act of respiration." It commences and terminates with the respiratory act, and in this respect, is peculiar and easily recognized. This sound has been denominated "*the cephalic sound of respiration.*"

"The second sound which strikes the ear, is one whose impulse seems to be transmitted from a distance. It is evidently that of the heart, and is a soft mellow sound, resembling that produced by softly palpating the cheeks when distended with air." This sound is synchronous with the action of the heart, and "varies in frequency and intensity, as the contractors of that organ vary in rapidity and power." This has been called the "*cephalic sound of the heart.*" The sharp, piercing, and vibratory sounds which accompany the act of crying or speaking, and which can be so distinctly heard over every portion of the skull, has been termed the "*cephalic sound of the voice.*" It varies somewhat in its tone at different parts of the head, being the least shrill and piercing at the unclosed fontanelle. The other sound which attracts attention, and the only remaining one of the normal sounds of the head, attends the act of deglutition. It is a dull, massive, liquid sound, and so peculiar, that when once recognized, it never can be mistaken for any other bruit. This is the "*cephalic sound of deglutition.*"

Such are the bruits, which are heard in the heads of infants before the closure of the fontanelle. As age advances, and the density of the brain and cranium increases, these sounds become somewhat modified. The change which some of them undergo in the numerous lesions of the encephalon, is however, exceedingly slight: still others are so manifestly changed in their character, as to become symptoms of cerebral disease.

Beside a modification of the "cephalic sound of the heart," under the influence of certain diseases of the cranium, to a consideration of which this paper is more particularly devoted, I shall have occasion, hereafter, to speak of an equally striking modification of the "cephalic sound of the voice," which is found to accompany, and which I think is characteristic of a *particular* affection of the brain. It resembles, as nearly as the nature of the organs could admit, the sound which is known to accompany the effusion of fluid between the two pleuræ of the lungs, and is never heard, except in those diseases of the brain which are attended with a similar effusion between the membranes by which this organ is enveloped. It is, indeed, no more nor less than a simple *ægophony* of the brain; and as such, I doubt not, but that hereafter it will be found a valuable acquisition to the category of signs, which belong to this obscure and difficult class of lesions. During nearly five years, in which the observations herein detailed. have been made, I have noticed the "cephalic bellows-sound, or some modification of it, in no less

than *eight* different and perfectly distinct lesions of the brain. In some of these, it has been a well-marked, constant, and invariable symptom; in others it has been less so, while in all it has been sufficiently striking to render it a valuable and independent physical sign.

The different diseases in which this symptom has been present and characteristic, I have arranged, and shall speak of them in the following order:

1. In simple congestion or irritation.
2. In acute inflammation of the brain, with or without effusion.
3. In chronic hydrocephalus.
4. In acute or local compression of the brain.
5. In induration, or scirrhous transformation of the substance of the cerebellum.
6. In ossification of the arteries of the brain.
7. In aneurism of the basilar artery.
8. In aneurism, and certain hydrocephaloid diseases.

The first instance in which I was able satisfactorily to determine the presence of the "cephalic bellows-sound," arising from *simple irritation or congestion of the brain*, was in the following case, transcribed from my note book for 1839.

Case I.—July 10th, I was called to visit a child of Mr. L., aged 18 months. This afternoon on awaking from its sleep, in the absence of its mother, it had crept from its place of rest, which was a high-post bedstead, and had fallen to the floor. In its passage its head came in contact with the corner of a small wooden foot cricket, producing a manifest contusion of the integuments over the right frontal bone, and depriving it of all consciousness.

When I arrived, the child was in a state of apparent insensibility. Its inspirations were long, surreptitious, and somewhat convulsive in character. Countenance pale and cadaverous, with the eyelids closed, and the eyeballs rolled upwards; extremities cold and clammy, with scarcely a perceptible pulse at the wrist. The pulsations of the heart were feeble and preternaturally slow.

On auscultating the head, which I did for the purpose of satisfying myself of the presence of this new and singular phenomenon of the brain, no "cephalic bellows-sound" was heard; not a sound was communicated to the ear, but the unnatural and convulsive sound of respiration. Thinking that the feebleness of the arterial pulsations might be the cause of the absence of this sound, frictions with warm and stimulating applications were directed to be applied to the extremities, with the intention of relieving the smothered condition of the internal vessels, by increasing the activity of the capillary circulation without. The pulsations of the arteries of the extremities, head and neck were soon very perceptible, and on applying the ear again to the head, a short and abrupt sound, synchronous with the action of the arterial pulse, was immediately communicated to it.

This was the "cephalic bellows sound," and is perfectly distinct from the "cephalic sound of respiration," heard on my first auscultation. This sound, which was at first rather faint, increased in intensity and distinctness as the natural warmth and vitality of body was restored. Friction was

directed to be continued, and some active internal remedies were prescribed. On the following morning, July 11, the child, after having passed a restless and troublesome night, awoke to consciousness. From its appearance, however, it was evident there still remained no inconsiderable degree of disturbance of the functions of the brain. There was a strong febrile action about the system; skin dry and hot; tongue and mouth parched, and accompanied with extreme thirst. Head and face hot and flushed, and the integuments over the contused portion, tender and swollen. The eyes were dull and heavy, and there was a strong tendency to stupor and drowsiness. The pulsations of the carotid and temporal arteries of the injured side, were *violent* and rapid: less so on the left.

Such were the apparent *external* physical signs. On auscultting the head, the "cephalic bellows sound" was found much more distinct than on the preceding evening. It is short, abrupt, but does not so much resemble the "coarse, rasp-like sound," as mentioned by Dr. Fisher and which accompanies certain lesions of the heart, as the soft, diffusive sound, which is produced by drawing the finger suddenly over the surface of a piece of fustian or velvet. This sound is perfectly in unison with the arterial pulsation, and occurs 130 times in a minute.

Cataplasms of mustard were ordered to the extremities, a powerful purge was administered, and three leeches applied to the right temple.

July 11, afternoon. Medicine has operated six times; blood still running from the leech bites; countenance more natural; though still pale; eyes look brighter and more intelligent; movements around him noticed; skin warm and moist, and urine evacuated freely for the first time since the injury. Cephalic bellows-sound still heard, but not so distinctly as at the morning visit. In fine, this singular and evidently abnormal sound, and the *first* I had ever noticed in a purely *functional* disturbance of the brain, grew fainter and fainter, until about the third day from the injury, it had entirely disappeared, and the little patient had regained the natural vigour both of body and mind.

Case II.—The second case of simple cerebral congestion which occurred to me, and in which the similar auscultic phenomenon was observed, was that of a young girl, aged 2 years. This patient, by being thrown from a carriage with its mother, had received an injury upon the head, similar to the one mentioned above. I saw her about two hours from the occurrence of the accident, and although not actually deprived of its senses, yet the singular and somewhat erratic movements of the child, coupled with the fears and apprehensions which the excitement of the moment had aroused in the minds of both parents and friends, demanded of their medical adviser a more careful, attentive, and serious consideration of the case. There were no external marks of injury upon the child, either about the body or head, not even the slightest abrasion of the skin could be found, and had not the age and the intelligence of the child removed it far above the reach of suspicion, I should have looked upon it merely as a case of hysteria.

Apart from this, however, there was evidently some functional disturbance of the brain. When left undisturbed, there was a disposition on the part of the child to fall asleep; upon being aroused, however, the countenance maintained an appearance of intelligence, although the eye had rather an uncertain and vacillating look and movement.

On ausculting the head, I directly caught a cephalic murmur, very much resembling that described in the previous case, and though less distinct, yet

like that, it was short, abrupt, and in frequency corresponded with the pulsation of the heart and arteries.

The next day the child had recovered from the immediate effect of the fall, and the "cephalic bellows-sound" had disappeared.

Case III—Was that of a young girl, aged 4 years. This patient, in the month of January 1842, while on her way to school in company with her brother, a little older than herself, in attempting to cross over a small plat of ice, slipped, fell, and in her fall brought her head with her whole force in contact with the ice. The blow, at the time, appeared to occasion only a momentary loss of sense. She was assisted up by her little brother, and proceeded immediately to school. During school hours, she was observed by her instructress frequently to fall asleep, and once or twice on being questioned, she complained of "dizziness in the head," and of the "school-house turning round."

I was called to see her in the afternoon of the same day, and found her labouring under all the common symptoms of a severe cerebral congestion. Her sleep was deep and heavy, almost lethargic, and was interrupted every now and then, with a low muttering moan, and frequent restless and uneasy movements of the head and limbs.

On applying my ear to the head, I at once recognized the cephalic murmur which I had previously noticed in similar cases of congestion of the brain. I think it was not so plain and distinct in this case as in other cases in which I had observed it, where the anterior fontanelle remained unclosed. It was distinct enough, however, to be readily recognized by one or two individuals present, who had never before practised auscultation. As in the cases already cited, the sound was short, abrupt, and synchronous with the motion of the heart and the action of the arterial pulse. A strict antiphlogistic treatment was prescribed, and cupping to the amount of two or three ounces from each temple. The sudden abstraction of blood from the head by means of the cupping-glass, seemed to afford almost instantaneous relief, and yet I must confess, I could not perceive that the distinctness and length of the bellows-sound were at all diminished. A second application of the cups was made on the following morning, which, beside the relief it brought to my little patient, evidently very much diminished the intensity of the cephalic murmur. In short, just so far as the functions of the brain, from day to day, regained their natural and healthy action, just so far did this pathognomic symptom of their disturbance also die away.

Case IV.—This, the last case which I shall detail under the present head, I notice more on account of its singular and fatal termination, than for any marked auscultic phenomenon which it developed. I transcribe it as recorded in my Note Book of Cases for 1841.

March 16th. I was called to see the daughter of Mr. C., a little girl 3 years of age, who had been labouring under a violent attack of hooping-cough, during the preceding four or five weeks. Generally speaking, she had five or six severe fits of "coughing" during the twenty-four hours. These paroxysms, sometimes longer, and sometimes shorter, averaged from five to ten minutes in duration. For the last four or five days, they seemed to have increased both in length and severity, and once or twice, after a very *severe* and protracted fit of coughing, a sort of tetanic rigidity of the muscles of the face and neck had been observed by her parents. It was the appearance of this last symptom which had given occasion for my visit. On

entering the room I found my little patient in the midst of a severe paroxysm of coughing, with her countenance bloated, her "face black and full of blood."

> "Her eye-balls farther out than they were wont,
> Staring full ghastly, like a strangled man,
> Her hair uprear'd, her nostrils stretched with struggling,
> Her hands abroad displayed as one that gasped
> And tugged for life, and was by strength subdued."

With her tongue spasmodically protruded, and accompanied with a copious secretion of a frothy saliva; with every muscle convulsed and every nerve strained to its utmost tension; she looked the very impersonation of a "living asphyxia," in the last struggle to rend asunder the throttling embrasure, which death was not in vain endeavouring to throw around her.

I could not help noticing the untoward severity of the paroxysms; and although accustomed to look upon this disease as one comparatively free from all danger, I was deeply impressed with the conviction, that death had already set his seal upon my patient, and the grave marked her out for its prey!

After the paroxysm had subsided, and as soon as the little sufferer had obtained a few moments' repose from this struggle between life and death, I carefully applied my ear to the coronal portion of the head, and, beside the hurried and laboured sound of respiration, I at once detected a perfectly audible and distinct "cephalic bellows-sound." It did not differ from the same sound as described in the foregoing cases, except that it was more continuous, the sounds running into each other, and scarcely leaving a perceptible interval between. The sound evidently diminished in intensity during the thirty-five or forty minutes to which my visit was protracted; but it had not at the end of that time entirely disappeared.

Till within the last two or three days, the child, as I was informed, had maintained its accustomed spirits and playfulness during the intervals of the paroxysms. Since then she had become exceedingly nervous and irritable in her disposition, little inclined to play, but rather averse to see amusement, and much inclined to sleep.

Besides the probability of this temporary congestion of the brain, accompanying each paroxysm of the cough, there were also present some unequivocal signs of no inconsiderable bronchial affection. A deep and sonorous rhonchus, interrupted here and there by a slight mucous râle, was heard throughout both lungs. The lungs resounded well on percussion, except near the posterior portion of the right one.

Once or twice, for a few moments preceding a fit of coughing, I was informed that the respiration had been exceedingly laborious, and accompanied with that peculiar dry and stridulous sound which is so characteristic of *croup*. Pulse frequent, tongue coated; skin dry and hot. Antimony and paregoric, with a powerful purge of calomel, were prescribed, and a pediluvium at night, with poultices of mustard to the feet and legs. A small vesicating plaster was also applied over the posterior portion of the right lung.

17*th*. Morning. Sleep has been more quiet through the night, and less interrupted by coughing; respiration is also freer and more natural; otherwise, the child is much the same as yesterday. Chest still resonant on percussion, except over the inferior portion of right back; mucous rhonchus still heard throughout both lungs. Pulse still frequent, skin hot, cheeks

flushed, tongue coated, and the lips dry and parched. Bellows-sound inaudible.

Continue antimony and paregoric, with oleum ricini ℥ss, to be repeated in three hours if necessary.

In the evening was again present during a very severe paroxysm of coughing, which was followed by a distinct and well marked bellows-sound, which entirely died away again within the lapse of twenty-five or thirty minutes. Bowels had been moved five or six times during the day, which seemed to afford a little temporary relief. Blister had extensively vesicated the surface, under the influence of which the irritation about the lungs had somewhat subsided.

18*th*, 19*th*, and 20*th*, much the same, excepting the length and violence of the paroxysms of coughing, which of the two, had rather increased.

21*st*. Early this morning I was hastily summoned to attend the child—as the messenger informed me, "in a fit." I immediately repaired to the bedside of my little patient, and was much surprised to find it labouring under the usual symptoms of a decided cerebral apoplexy. The accession of the fit, I was told, occurred during a moment of strangulation which accompanied an unusually long and severe fit of coughing. The urgency of the case, together with the grief and anxiety of its friends, seemed to admit of not a moment's delay either for inquiry or examination. That was demanded, and that only, which would afford instantaneous relief, and rescue the little sufferer from the jaws of death.

A free discharge of blood was made from an opening in the temporal artery of the left, and the jugular vein of the right side. After the bleeding, ice was ordered to be applied to the head, accompanied internally with an active purge, to be followed with enemata of castor oil and spirits of turpentine.

On ausculting the head at this moment, contrary to every expectation, I was unable to detect any sound, except the long and stertorous sound of respiration. A similar result followed the third and fourth subsequent examination, which were made during the deep, lethargic sleep into which the child had so suddenly fallen. In about seven hours from the time of its attack, the powers of life seemed to rally again. Consciousness in a degree returned, though not sufficiently clear, I think, to recognize the countenances of her afflicted parents. She has had no paroxysms of coughing since this evident attack of apoplexy; and I now notice for the first time, a slight contraction of the muscles of the right side of the face. There was found on a further examination, an evidently palsied state of the whole of the left side of the body. The sensibility of this side, though much diminished, was not, however, entirely lost. The foot was slightly turned inward, and the muscles of the arm affected in such a manner as to draw the thumb and fingers of the left hand towards its palmar surface and each other.

During a visit this evening, my attention was again directed to the discovery of whatever physical sign might be developed within the cranium. The paryoxysms of coughing had returned during the latter part of the afternoon, and had continued more or less frequently during most of the evening.

On ausculting the head immediately succeeding a coughing fit, I again detected a very distinct and audible murmur, varying somewhat in its character from the pure bellows-sound of the head. It was less circumscribed in its locality and duration than that sound, and was more a dull, impulsive, muffled murmur, and withal a sound "sui generis."

I had scarcely time to satisfy myself of the *real* character of the murmur, when a sudden accession of coughing, with a momentary sense of suffocation, put a period to the existence of my little patient.

Examination of the body sixteen hours after death.

External appearance of the body is natural, except the integuments about the head, face, and neck: these appear bloated and swollen.

Head.—The membranes of the brain natural, except the pia mater and arachnoid, which are somewhat congested. Eleven or twelve whitish and rather opaque granulations are clustered together about the posterior part of the arachnoid, near the longitudinal fissure; there are also some very slight traces of effusion beneath this membrane. The substance of the brain appeared, when cut into, natural both in colour and consistence, except here and there are to be seen some small points of bloody matter, extending from the extremities of the excised vessels. Just below the middle of the right hemisphere, and nearly on a level with the corpus callosum, a considerable quantity of partially coagulated blood is found, evidently the effect of a rupture of the substance of the brain at this place, and a recent hemorrhage from the ends of the abraded vessels into it. The brain, otherwise than the *rupture*, the hemorrhage, and the congestion of its substance, was healthy, and in its natural state.

Thorax.—Heart apparently healthy, with the exception of a slight effusion of a very clear and limpid serum into the pericardium, amounting in all to not more than a fluidrachm.

Interlobular emphysema exists throughout both lungs, manifested by the bubbles of air, which are seen collected in clusters and chaplets, over their surface and along the division of their lobuli. These are particularly noticeable over the left inferior lobe. There is also a considerable emphysema about the roots of both lungs.

Throughout the inferior lobe of the right lung, and especially over its posterior portion, there is a high sanguineous congestion, such as is found in the acute stage of pneumonia, and which gives a solidity to the lung, approaching a sanguineous hepatization.

The remaining portion of the lungs were of a light, spongy texture, and except for their emphysematous state, seemed sufficiently fit to carry on the function of respiration. The *mucous membrane* of the larynx and trachea is red and injected, and in the lower part of the former, are some slight appearances of a bloody exudation. The bifurcation, and the more minute ramifications of the bronchia are found filled with a thick, tough, ropy mucous secretion, of nearly the colour and consistence of prepared starch.

Abdomen.—Not examined.

I have thus been somewhat minute in noticing the history of this last case; not so much, however, for the mere local and physical signs which it developed, as for the interesting and singular pathological conditions which accompanied them.

The cephalic murmur at first noticed, was evidently *that* growing out of a simple cerebral congestion. It was the pure "cephalic bellows-sound of the head," while that which was afterward noticed, and which was coexistent with the state of apoplexy, differed from the ordinary bellows-sound, and was evidently connected with another lesion of the brain, aside from that of simple congestion.

Beside the four cases already cited, I have had occasion to notice a similar phenomenon, in no less than thirteen other instances of cerebral congestion, brought on by concussion of the brain from falls, or some injury immediately inflicted upon the head; and in every instance the existence of this phenomenon, its commencement and its termination, has been cotemporary with the accident and recovery.

There are, however, many circumstances, other than those which are connected with an actual injury of the head, in which decided cerebral congestion is indicated, and in which this new auscultic symptom is manifestly developed.

Out of 100 cases of hooping-cough which I have examined, of about the average severity of the disease, in 87 of them I have been able to detect the cephalic bellows-sound. It has uniformly made its appearance immediately after the accession of a severe paroxysm of coughing, and has as uniformly disappeared so soon as the equilibrium of the circulation was restored; and in no instance of the disease which has fallen under my observation, except in the case (4th) as mentioned above, has the sound continued to be heard beyond the space of a very few minutes.

Out of 225 cases of protracted and painful dentition, which I have had occasion to notice within the last four years, in 189 I have distinctly heard the cephalic bellows-sound; that is, in three quarters of all the cases of teething which I have observed within four years, sufficiently severe to attract attention, the cephalic bellows-sound has been distinctly heard; while on the other hand in a perfectly calm and natural condition of the system, I have been unable, under the most favourable circumstances, to detect the least murmur or sound in the head, whatever.

To many, therefore, regarding this phenomenon as a symptom which is pathognomic of a particular condition of the brain, this may seem a most unwieldly proportion: yet when we consider the inordinate sympathy which exists between all the mechanical functions of the body and this *simple* nutritive process,—the intimate connection it has with the brain through the nerves, and the peculiarly irritable state it induces in the whole nervous system, together with the infinite variety of more or less remote affections which are supposed to grow out of this process—the ratio dwindles into comparative insignificance.

Such however *is the fact*, and I venture to say, there is not an individual in the whole range of the Medical profession, who is not an almost *daily* witness to the tremendous nervous and arterial excitement, which is induced by the more protracted cases of painful dentition, and we might add too, to the frequent, melancholy and fatal results, which spring from a so apparently trifling cause. Apart, then, from any circumstance which the presence of this phenomenon may seem to indicate, in every case of painful dentition, the organs within the cranium are known to be in a state of the most unnatural excitement. This is obvious from the most simple rational signs

which can exist. But it is also known, that this state of things within the cranium is always accompanied by a perfectly distinct and audible murmur, which has been termed "the cephalic bellows-sound." This sound, as has already been stated, is never heard during the process of dentition, except when accompanied by a greater or less cerebral congestion. The presence of the *one*, then, proves the existence of the other, and it follows, that whenever this "cephalic bellows-sound" is heard, a congestion of the brain must coexist.

The author of the above mentioned paper on "cerebral auscultation" thus speaks of the presence of the cephalic bellows-sound in cases of painful dentition as going to prove the existence of cerebral congestion. "I find," says he, "that the cephalic bellows-sound, except in actual diseases of the head, cannot be detected in children previous to the commencement of dentition, and that it ceases to be heard after the teeth have pierced the gum; and in cases where there is a long interval between the successive appearance of two crops of teeth, the bellows-sound, which was developed during the cutting of the first crop, will sometimes cease during the interval, and occur again during the severe excitement produced by the cutting of the second crop of teeth. After all the first set of teeth have made their appearance, the sound dies away and seldom occurs during the second dentition. In three or four instances, however, I have noticed it in children, during the process of the second dentition, but *never* in the adult, except in actual cerebral disease."

The presence of the bellows-sound during the process of the "second dentition" is not a matter of so unfrequent occurrence as, from the above remark, might be properly inferred. I have had occasion to notice no less than 22 cases of second dentition, in which this sound was indistinctly heard. It was not so distinct however, in these, as in the former cases, yet sufficiently so as to be easily caught by the ear.

I have also noticed a similar phenomenon in two cases of dentition *in the adult*. Both were individuals of exceedingly delicate and nervous temperament, and in both it occurred during the growth of the wisdom teeth. The sound however was characteristic and could not be easily mistaken.

Every indication therefore, in regard to the physical condition of the parts connected with this process, is that of *plethora:* and a point which cannot be too steadily and uniformly insisted upon, is the local means necessary for relieving the irritation and congestion of these parts. I mean that of incising the gums over the points of the protruding teeth.

It is frequently the case, that the *most signal benefits* are derived from this perfectly simple and harmless operation; and yet, *too often*, are the whims and prejudices of people allowed to interfere with its judicious and timely performance. Even *mothers*, and individuals too whose rank and intelligence should remove them far above the reach of such *vulgar* and unworthy influences, are by far too prone to allow their over-excited and

fevered imaginations to be haunted with the ghosts of some goblin story, which ignorance and prejudice have conjured up to poison the better judgment against the propriety of the act. Let me relate a case which is just to the point. It is but a short time since, that I was called to attend a child suddenly attacked with convulsions. The cause, beyond all question, was the irritation produced by the protruding teeth. On examining its gums, they were found much swollen and in a state of high inflammation. I at once suggested to its mother the propriety of freely incising them. I was, however, repulsed in my first attempt to do this, by the uncalled-for and untimely interference of a "knowing female acquaintance" of hers, who happened to be present at the time, and who showed her "pious abhorrence" of the *deed* by such *unmeasured ejaculations* as these:—"Good heavens! Doctor, you do not think of cutting *that child's teeth when in a fit!*"—I made no reply, as my attention at *this* moment was particularly directed to the child. Turning to the mother, continued she, "were that my child, Mrs. L——, I would no more have its teeth cut than I would have its throat cut!! Why, 'tis only a few days ago that Mrs. 'Gossip,' one of my neighbours, told me of a little child, which, *just like this* was taken in a fit, *the doctor was called, cut its teeth, and in three days it was a corpse*, and you may depend upon it, *cutting its teeth* was the death of it!!!"

Now what can be said to rebut such an argumentum ad hominem as this, and who could doubt but that the cutting of its teeth was the cause of the death of the child? Without stopping, therefore, to reason the matter, I only the more strenuously insisted upon the absolute necessity of the operation, and with the *reluctant consent* of its mother, performed it much to the discomfiture and chagrin of so important a personage. I saw the child on the following morning, and found it bright and playful as though nothing had happened to it, and affording to its delighted mother, a most convincing proof of the fallacy of such vulgar and absurd notions.

A case, going to prove the beneficial effects of dividing the gums, is also related by Dr. Fisher, and I doubt not that every medical gentleman can relate a similar experience of his own. Still, it must be confessed, such reasoning as the above, to the great mass of mankind, is the ruling principle in physics. Post hoc, ergo propter hoc, is a sequiter in medicine which nothing can ever refute, except the universal diffusion of a more thorough and enlightened knowledge of the laws which influence and regulate the human system.

I shall now speak in the *second place* of the cephalic-bellows as connected with *an acute inflammation* of the brain.

Within the time that these observations have been made, I have noticed this phenomenon in 19 different and distinct cases of acute inflammation of the brain. It was present in all of them as a prominent and unequivocal

spmptom, and as such its progress and development was carefully noted, from the commencement, to the termination of the disease in each case. I shall, however, out of the whole number, detail the history of only three cases, taken at random from my Note Book, which will embody all that is important in regard to the observations which have been made in the remaining cases.

Case I.—March 23, 1839, visited a child of Mr. C., aged 3 years and 3 months, which had been ill for some little time, as was supposed from the effect of worms. I found it to-day presenting the following appearances. In the cradle asleep; it lay with its mouth and lips open, head thrown back, and its eyeballs slightly turned up beneath the partially closed eyelids. Head hot, and the pulsation of the arteries about it violent and rapid. Face red, lips dry and parched, as also was the surface of the whole body. Tongue coated with a white fur, its tip and edges dry and red. Respiration rapid, irregular and unequal, and frequently interrupted with a half stifled groan, indicative of great distress. Hands oftentimes and violently thrust into the mouth, nose, and ears, with frequent turning and rolling the head from side to side. For the last four or five days it was noticed that the child had become fretful and peevish, and at times dull and drowsy; still at occasional intervals it was bright and playful. Within the last two days there had been loss of appetite, accompanied with nausea and extreme thirst. Bowels had been freely opened by medicine administered, with the idea of expelling from them the *worms*. The secretion of urine has been scanty, high coloured, and of a strong disagreeable odour. In addition to this, the child was exceedingly annoyed with a dry, troublesome, hacking cough, especially preceding the sensation of nausea. Pulse 140; respiration 38.

The child having been raised from the cradle, I carefully applied my ear to the upper portion of its head, to ascertain, if possible, the presence of any physical sign within the cranium. The restlessness of the child, with the continued rolling of its head, at first prevented my detecting any thing unusual about this organ. It soon, however, became quiet, I immediately caught a very distinct, audible murmur, which I at once recognized as the bellows-sound of the brain. It was an abrupt, slightly raspish sound, differing in no essential particular from the bellows-sound, which I had before heard in cerebral congestion. It was perfectly distinct from the peculiar sound of respiration, and was synchronous with the action of the heart and arterial pulse.

Auscultation and percussion discovered nothing unnatural in the condition either of the heart or lungs; and after the most careful and attentive examination of every portion of the body, the least trace of a sound, resembling that within the cranium, could not be found. Its location was within the brain, and it seemed of itself to indicate some abnormal condition of that organ.

Cold applications were ordered for the head; mustard to the feet, with four grs. of calomel, to be taken once in three hours, until violent catharsis was produced.

24*th*. Child had passed a restless day and night. Its symptoms are in no way amended, but of the two, aggravated. The tendency to sleep has much increased, attended with a low, stertorous breathing, differing widely from the hurried and rapid respiration of yesterday. The conjunc-

tiva of both eyes is slightly injected, especially that portion left exposed by the partially closed lids. Some stiffness of the muscles; which is not, however, well marked. Pulse still rapid.

On examining the head to-day, I at once recognized the sound I had discovered yesterday. It was louder, more distinct, and from being soft, short and diffusive as yesterday, it had become prolonged, coarse, and rasp-like; differing in this respect from the short and abrupt sound of congestion. It was perfectly distinct and characteristic, and which once heard, could not be mistaken. Compressing the carotids with the ends of the fingers, caused some little alteration in the character of the sound. It was increased both in intensity and duration, until the pressure had reached a certain limit; beyond *that*, the sound became less and less distinct, confused, running into each other, and finally altogether disappearing whenever the pressure was carried to the point necessary to interrupt the course of blood, through these vessels to the brain.

Compression of *one* of the carotids did not entirely obliterate the sound, although it rendered it somewhat duller than when the circulation was free and unimpeded.

Six leeches were applied to the temples, and an equal number to the nape of the neck, and such other remedies were internally prescribed, as the nature of the case seemed to demand.

On the following day, March 25th, I found the child much relieved. Respiration less laborious; more wakeful; and less heat about the surface of the body and head. The pulse, however, remained full and rapid; and auscultation still discovered the presence of the cephalic bellows-sound. And, although not familiar with the nature and character of this phenomenon in the brain, I was unable to separate it from the idea of compression of some kind upon the blood-vessels of that organ.

26*th*. The child had relapsed into a state of somnolency, from which, with its concomitant symptoms, the most careless observer would at once have diagnosed the existence of a most dangerous form of cerebral inflammation. Extremities were cold and clammy; muscles rigid and contracted; eyes dry, red, and injected, sunken in their orbits, and rolled upwards; pupil of the right side dilated.

On applying my ear to the head of the child again to-day, the bellows-sound is at once recognized. It is much more distinct than yesterday, and is also, when pointed out and described, easily recognized by the nurse and parents of the child.* The sound is rapid, undulating, and prolonged to such

* In Dr. Cowan's "Manual of Physical Diagnosis," the discovery of the Encephalic Bellows-sound, as a symptom of "certain acute and chronic affections of the meninges, and also cases of inflammation of the brain" is noticed and accredited to Dr. Fisher, of Boston; and it is also observed by the same distinguished author, "that MM. Andral, Bouillaud, Barth, and Roget, have failed to detect the encephalic bellows-murmur, after repeated examinations; and its true value, if any, remains to be investigated."

To be able to discover the presence of the cephalic murmur in a great many instances, it must be acknowledged, is a matter of no small difficulty, and yet, *it is not a little singular*, that men of such noted powers of observation as Andral, Bouillaud, Barth, and Roget, should have failed to detect this sound, *which in some cases*, to say the least, is a well marked and prominent symptom, and especially so, when it is a well known fact, that to many of the physicians of the city of Boston, its presence in certain diseases of the brain, has become a matter of quite common observation.

The *real value of this symptom* of cerebral disease, moreover, may not yet be fully

a degree, as to render it almost one continuous murmur. It corresponds in frequency with the arterial pulse, and is 148 to the minute.

This new and singular auscultic phenomenon continued to be a constant symptom, increasing in distinctness until the evening of the following day. From that time the sound began to diminish in intensity, becoming more and more indistinct as the powers of life were enfeebled, till it finally died away as convulsions and coma supervened, and death closed the scene.

Autopsy 12 hours after death.

External appearance.—Body emaciated—limbs stiff and rigid—countenance sunken.

Head.—Blood-vessels of the dura mater tinged and swollen with an unusual accumulation of dark venous blood. There is also some slight adhesions of this membrane to the skull, which are recent and easily torn from their attachment. The slight effusion of a serous fluid is found within the cavity of the cranium, more particularly confined to the arachnoid cavity. The quantity is inconsiderable and undetermined, the greater part of it escaping during the separation of the integuments from the brain. Substance of the brain highly congested. The ventricles are much distended and filled with a thin, clear, transparent fluid, to the amount of four or five ounces. The cavity at the base of the brain contains also a considerable quantity of a rather turbid fluid, and the blood-vessels at this part are covered with shreds and flocculi of coagulable lymph, manifestly the traces of a violent and recent inflammatory state of the parts.

Organs of the thorax and abdomen healthy.

Case II.—April 20, 1840. I was called to visit the child of Mr. W., aged two and a half years. It had exhibited no symptoms of indisposition, till within the last three or four days. A slight convulsive fit, which was soon over, first indicated the necessity of medical advice. On inquiry, however, I found that the child had been less sprightly than usual for a number of weeks, and occasionally it had been heard to cry out in the midst of its sports as if struck, or attacked with some sudden pain. This was soon over, and from the suddenness of its accession and the shortnees of its duration soon ceased to attract attention. At this moment all the rational signs indicate a high state of febrile excitement:—skin hot and dry—face flushed and suffused with blood—tongue coated, lips dry and parched and attended with extreme thirst, all of which last symptoms had evidently increased since the occurrence of the fit. It was this last mentioned symptom which particularly attracted my attention to the brain. Examination of this organ by auscultation, after some little delay, discovered a well marked bellows-sound, though very much fainter than the similar sound which I had heard in simple cerebral congestion. The uneasy movements of the child may have had an influence in rendering the apprehension of this sound somewhat difficult. A more thorough examination of this point on the following day, was succeeded by a more satisfactory result. For three or four days, this sound continued to be heard, without the supervention of any other

known, still it is not for a moment to be questioned, but that as a physical sign, it will prove itself to be a valuable acquisition to the other means of investigating diseases of the brain; and its intrinsic worth is by no means lessened, "because it is the accompanying symptom" of such difficult and irremediable lesions, any more than that the same circumstance should render such physical signs as the cavernous râle, pectoriloquy, or metallic tinkling, valueless in exploring diseases of the lungs.

sign; and yet I was satisfied, merely from the presence of this one particular symptom, and without regard to any of the rational signs of the disease, that it would eventuate in a confirmed and probably fatal inflammation of the brain: and the sequel of a few days, proved that my apprehensions in regard to the case, were not groundless.

Without entering more minutely into the detail of the symptoms which were developed from day to day, it is sufficient to state, that the bellows-sound remained a constant and unvarying symptom as in Case I. I think it increased in intensity and distinctness, just in proportion to the degree of inflammatory action within the brain; and as the powers of life began to sink, the sound in like manner gradually began to diminish, and ceased only when the vitality of the body had entirely departed.

Examination of the body after death, showed the well marked traces of a violent and fatal inflammation of the brain. A highly injected state of the blood-vessels of the dura mater and the other membranes of the brain, a copious effusion of a thin serous fluid into the cavity of the ventricles and about the base of the brain, together with a highly congested state of the blood-vessels at this part and of the whole substance of the brain, were indications, which could mislead no one in regard to the nature and locality of the disease in question.

The Third and last Case, to which I shall ask attention under this head, was the daughter of Mr. W., aged five years and four months, and sister to the subject of the case last noticed. It may be proper to remark in this connection, that this was the *third* child of these same parents, all of whom died of inflammation of the brain. I shall give this case at some length, it being interesting, not only as an instance of the development of a well marked bellows-sound, but also one in which a peculiar, and strikingly modified sound of the voice was noticed as supervening upon the last mentioned phenomenon.

I was called to visit this little girl, on the 9th day of August, 1841. About twelve days previous to this, she had received a slight injury upon the head, by being tossed into the air from the horns of an unruly cow. The fall occasioned at the time, a temporary concussion of the brain. This however soon passed off, and was not considered of sufficient importance to need attention. To-day she complains of nothing, except a severe pain a little below the right hypochondrium. This had troubled her more or less ever since the accident; now it is quite intolerable. There is no tenderness on pressure, neither do the parts show any marks upon it, that it had ever been the seat of any considerable injury. The bowels are slightly tympanitic. The head was examined, but neither rational or physical signs discovered any thing abnormal in its condition.

Fomentations of hops were ordered for the bowels, and half an ounce of castor oil, with 30 drops of paregoric was administered, the same quantity of paregoric to be given every three or four hours until the pain had subsided.

August 10th.—Oil had produced two or three copious evacuations, and 120 drops of paregoric had been administered during the night with no apparent relief. In all respects the child was much the same as yesterday. Pulse a little hurried, being 98 to the minute. Skin quite natural—slight thirst—some appetite though the tongue is coated—urine scanty.

Continue fomentations and paregoric, with a gradual increase of the quantity if needed.

11*th.* and the four succeeding days, appearances remain much the same with only a slight amendment in the degree of pain, as the system was kept under the influence of opium.

Examination of the head was made once or twice during the time without any satisfactory results.

17*th.* To-day, for the first time she was suddenly attacked with cold rigors and "ague fits," which lasted at different intervals for the space of 30 or 35 minutes. These were succeeded by a state of somnolency, which continued through the great part of the day. During sleep, some slight and irregular remissions of fever were noticed. On waking the pain in the bowels had been exchanged for a more violent and throbbing pain about the temples and forehead. The pulse also, from being quite moderate, had become small and rapid, 145 per minute. Tongue furred—skin hot and dry—thirst, with extreme heat and tenderness about the head and scalp. Anorexia with nausea at the presence of food.

Examination of the head to-day, immediately detected the presence of a very distinct and audible murmur, which was the bellows-sound in question. It was more distinct than I could have anticipated finding it, especially in so early a stage of the disease. It is audible over every portion of the cranium, but most distinct at its upper and coronal region. It does not differ, except in distinctness, from the sound as described in the two previous cases, and as in them, it is coarse, rasp-like and in harmony with the frequency and intensity of the action of the heart and arteries, occurring 148 times to the minute. It is also perfectly distinct from the sound of respiration and of the voice, and when once recognized could not be mistaken.

Compression of the carotids, sufficient to impede the circulation of the blood through them, caused it entirely to disappear. This sound was so exceedingly striking, as to be recognized by one or two present, and was spoken of as "the sound which the blood would make rushing through the veins." I carefully examined the head, after having made an opening into the external jugular, for the purpose of ascertaining what changes, if any, might take place in the character of this phenomenon during the process of bleeding. The sound after a few moments began to grow less distinct, and in a degree to lose that harshness which had previously characterized it. Bleeding was continued ad deliquium, when the sound entirely vanished. It did not reappear during the little time longer to which my visit was prolonged.

Cold applications and ice were ordered for the head, and a blister to be applied between the shoulders over the course of the spine. Six grains of calomel were prescribed every *four hours*, with infusion of senna at short intervals between.

18*th.* Child appeared brighter than yesterday, though *I was informed* that the sound had returned to its head in about two hours from the time of bleeding, and now on examining the head it is plainly perceived.

Blister vesicated well—24 grains of calomel had been given, with the infusion of senna, and with but little effect upon the bowels. Continue calomel and senna assisted with injections of castor oil and spirits of turpentine.

19*th.* Found the child evidently growing worse, and learned that it had experienced two or three severe "ague turns" and chills during the night. Medicine had operated well, with no apparent relief. Countenance looks pale, sunken and distressed, and the eyes wear an expression of

extreme heaviness. A deep stupor and an unwillingness to be moved alternate with violent screams and complaints of the head and abdomen. Every attempt to raise up the child, is attended with sickness of the stomach and vomiting, with an exceedingly troublesome, dry, hacking cough. Respiration is hurried and irregular, amounting to 49 to the minute. The chest, however, resounds well on percussion, and the respiratory murmur is perfectly distinct throughout both lungs. Pulse is 148 in a minute, and irregular both in the frequency and strength of its pulsations. This irregularity of the pulse evidently corresponded with a similar irregularity in the respiratory movements. The action of the heart is turbulent, and the pulsations of the temporal and carotid arteries violent and rapid. Auscultation at once discovers a remarkably strong and well marked bellows-sound. It is more distinct than I had ever heard it, and seemed to correspond both in frequency and in strength with the action of the heart and pulsations of the temporal and carotid arteries. It was heard in almost every portion of the cranium with equal distinctness, and could not be confounded with any other murmur of the head.

Beside the bellows-sound already described, my attention was, for the first time, attracted to the presence of a *peculiar*, and to me novel sound, *connected with the passage of the voice* through the brain and skull. It has a much sharper and shriller tone than that of the natural voice, and seems to strike upon the ear, as though the shrill notes of the clarion were echoing through the vault of the cranium below. It has, moreover, another character which renders it altogether *so unique*, that when once heard, it cannot easily, the second time, escape recognition; I mean a trembling-brazen-vibratory sound, which in imagination, resembles nothing so much as the noise produced by singing, crying, or speaking through the teeth of a comb, previously covered with a bit of silk, parchment or paper. In two or three instances since the record of this case, I have noticed this sound corresponded almost exactly, with the trembling, bleating sound which is so characteristic of the *ægophony* of the lungs. And indeed, so nearly does this sound resemble in every essential particular that of ægophony, and so nearly also do the pathological conditions, necessary to the development of these phenomena, resemble each other, that I know of no appellation, by which *this* can be better designated from *that*, than by applying to it the term "*encephalic or cerebral ægophony*." But to resume the history of this case—it will be sufficient to state, that the *bellows*-sound still remained a constant and important symptom, so long as the powers of life were well sustained, and failed, only when they had become so much enfeebled, as to render existence, every moment, an improbability. The ægophonic sound of the voice, on the contrary, was equally present and distinct, from the time of its first appearance, up to the moment when the last groan told that life had indeed departed from the body.

On examining the body after death, the following appearances were noticed, beside the usual pathological signs of acute inflammation of the brain, such as have been already described in the previous cases. Convolutions on the surface of the brain were much flattened; and an extensive extravasation of a serous fluid was found within the cavities and between the membranes of the brain, covering nearly the whole of their free surfaces. The great mass of the encephalon, in fact, was, as it were, surrounded with the fluid which had been secreted within it. Over nearly a third of the posterior portion of the cerebrum, there was spread a thick layer of coagulable lymph, which had

the appearance of a real membranous expansion enveloping this part. Beyond this there was nothing peculiar in the pathological appearances of any part of the body.

In the third place, I have noticed the cephalic bellows-sound as a prominent symptom in Chronic Hydrocephalus.

The whole number of cases of this disease, which have occurred to me since these observations were commenced, is *five*. Of these, *four only* were subjected to medica ltreatment. One of these, moreover, soon died of a disease, which was purely accidental, and in no way connected with the one in question, and under circumstances too, which forbade any examination of the parts concerned in its development. Of the three remaining cases, I shall relate the history of each, in as brief a manner and as rapidly as the causes, treatment, and termination of each one, will properly admit.

Case I.—The subject of this case was a child, aged 3 years and 4 months. I transcribe it as recorded in my Note Book for 1840.

July 26th. I was consulted by Mr. G., in regard to the health of a little son of his, who, as was reported, had been labouring under "*some obscure complaints, for the last* 14 *or* 15 *months, which had produced an extraordinary enlargement of the brain.*" The child, as I was informed, had enjoyed uninterrupted good health from the time of its birth, until nearly *nine* months of age. The process of teething commencing about this time, the health of the child evidently began to decline.

The period of dentition was protracted and painful, and although for a long time unattended with any thing which might awake apprehensions of its final result, the fleshy plumpness and rotundity of its little body, was at length noticed gradually to dwindle and fade away.

At about the age of 17 months, while suffering from a severe attack of dysentery, he was suddenly seized with convulsions of the most alarming character. In this miserable and forlorn condition, the powers of life balancing between the two extremes of existence, the little sufferer lay for a long time. During the eight-and-forty hours immediately succeeding their first access, it was reckoned that the child suffered from the paroxysms of no less than twenty-three different fits: and in the course of three or four months, had experienced upwards of a hundred fresh attacks. Up to the present time, even, the child when frightened or irritated, occasionally manifests signs of a strong tendency to them, and which is generally succeeded by a slight feverish habit, with stupor and listlessness.

At the age of 20 months, its head, for the first time, was noticed as being a little peculiar. The frontal portion had become more prominent than natural, and its transverse diameter was evidently much increased, and in spite of the most active and rigid treatment, with purges, blisters, leeches, issues, bandages, *et id genus omne*, the enlargement proceeded onward, while the fever and stupor gradually diminished, and at length died away.

The head has continued to increase in size up to the present moment, and yet the intellect of the child seems to be in no manner affected. It is lively, playful, and appears as sensible as most children of the same age; it is, however, unable to walk, and with difficulty to stand erect. The appearance of the child, to me, is most singular. Its head, which measures full eighteen

inches round, broad and expansive, with the frontal region projecting far over the rest of its face, and with difficulty sustained upon a most meagre stalk of flesh, shows a strange contrast with the poor shrivelled, attenuated form to which it is hanging for support. The frontal and parietal bones were separated from each other, to the distance of one-half or three-quarters of an inch; and the sutures of the frontal bone extended nearly down to the root of the nose. From appearances, I should judge that the anterior fontanelle had never entirely closed. The ossification at the posterior portion of the skull was complete, although the sutures at this point were separated from each other. The pulsations of the brain can be seen and felt along the fissure caused by the separation of the coronal and sagittal sutures. It is quite strong, and corresponds with the action of the heart.

The integuments over the expanded sutures, appear somewhat raised above the common level of the scalp. On ausculting the head directly over the parts where the pulsations of the brain are most distinctly seen, I hear a remarkably strong and distinct bellows-sound. I cannot perceive that it differs in any way from the same sound as heard in the more acute affections of this organ, save that it is slightly *less abrupt*. Like that, it is coarse, rough, and rasp-like, and is in unison with the pulsations of the brain, and with the movements of the circulating apparatus.

The sound of the voice in this case, is also peculiar. It is sharp, piercing, vibratory, and produces a tickling sensation upon the ear, which is quite insupportable. Like the sound of the voice as described in *Case* 3, of acute inflammation of the brain, it resembles very much the shrill brazen sound produced by speaking through the teeth of a comb covered with paper or thin cloth. It is perfectly distinct from the bellows-sound which accompanies it, and is to be ascribed to another and totally different cause.

All other remedies having been faithfully and perseveringly tried, I recommended the operation of tapping as the dernier resort, and as offering the only chance of restoring the brain to its natural condition, and the child to its accustomed degree of health. This proposition not being acceded to, the case was dismissed without further consideration.

The following October, I was again consulted in regard to the same child. During the time which had intervened between this and my first examination of the child, it had been submitted to the "*tender mercies*" of quackery in its most horrid forms. Pills and powders, hot drops and lobelia, lotions and liniments, *all* had been dealt out with an unsparing hand, and *all* to no purpose. The hot-bath and cold-bath, the shower-bath and vapour-bath had each, also in turn been tried, and all with no better success. Nothing, indeed, could be found which could lighten the child of its unwieldy load.

A measurement of the head indicates an increase in its actual circumference of nearly an inch and a half. The sutures had separated still farther from each other, and an unusual fulness and protuberance of the integuments over them, could not fail to attract the attention of the most careless observer.

On applying my ear to the head, I again recognized the bellows-sound, and equally distinct as before. It is perfectly audible in every portion of the cranium, and cannot easily be mistaken for any other sound.

The same characteristic sound of the voice is also heard, varying in its brazen shrillness, only as the intensity and pitch of the voice is increased or diminished. The vital powers of the body remain much the same; the frame-work still poor and attenuated, and the head still huge and unwieldy. The intellect of the child, as yet, remained apparently untouched, although

the frequent recurrence of convulsions had occasioned the most fearful forebodings of its speedy annihilation. It was an *only child*, and consequently any proposition which would hold out "but a chance for its recovery," would now be most willingly and gratefully acceded to. Drawing off the water by means of a perforation through the skull, or membranes, seemed still to be not only the most feasible, but the only rational method of affecting a cure. *Tapping*, then, was again proposed; and although the operation has been most unceremoniously condemned by such men as Gölis, Heister, Boerhaave and Hecker, and also by one of the most eminent practitioners of medicine in our own country, as "having nothing in it but its hardihood to recommend it;" the circumstances of the case not only rendered it advisable, but imperiously demanded it.

The operation was performed on the following day, after the manner prescribed by Dr. Conquest, of London, and with what success the sequel will show. A small opening was made through the integuments, about midway between the crista gilli process of the ethmoid bone, and the anterior fontanelle.

This place is chosen in preference to any other, as there is at this point less damage of wounding the corpus striatum, on the one hand, and the longitudinal sinus on the other. Through this opening, a small and delicately constructed trochar, made long and somewhat in the shape of a common couching needle, was passed down into one of the lateral ventricles. On withdrawing the instrument, a clear, limpid, watery fluid, at first very slightly tinged with blood, immediately began to flow through the canula from the brain. Compression was steadily and carefully made by an assistant during the operation. *Four ounces* only had been allowed to escape before the child began to show some symptoms of prostration.

Compression was still maintained, while the point of the finger was held over the free end of the canula, and the discharge was at once arrested. Cordials and some little diffusible stimuli were administered, and time given for the system to rally again.

I took this opportunity to examine the head, in order to ascertain what effect might have been produced upon the physical signs, which had been manifest upon previous auscultations. For the first moment or two, with the most careful attention, I was unable to catch the least audible murmur within the cranium. As the child, however, began to revive, I was enabled to detect an exceedingly low, faint and indistinct murmur, but could not for a long time identify it with a common bellows-sound of the head. A very powerful compression of the sides of the head by the assistant, at once developed the true character of the murmur. It, at the moment, began to increase in distinctness, and although not so audible as previous to the operation, it was sufficiently so to prove its *identity* with "cephalic bellows-sound." It increased and diminished just in proportion to the force used in compressing the brain, and when the head was for a moment left free, it entirely disappeared. Compression of the carotids entirely obliterated the sound under every circumstance. After the child had revived again, the discharge was allowed to proceed, and about *five ounces* more of fluid escaped.

The head was now carefully and tightly bandaged with strips of adhesive plaster and a roller, and the child permitted to rest. No untoward symptoms followed the operation, save a slight meningeal irritation, which speedily gave way to appropriate and well-timed remedies.

About three weeks elapsed, and the operation was repeated, and nearly five ounces more of a similar coloured fluid were again extracted.

Previous to the operation, repeated examinations of the head had discovered a well marked bellows-sound. It never was so distinct as before the first operation, although compression of the brain invariably rendered it slightly more perceptible. The peculiar sound of the voice, which also had been present in this case, in like manner, had in a measure changed. From the thrilling, brazen, vibratory sound which had struck so harshly upon the ear, it had become sharper, nearer to the ear and more circumscribed in its locality, and withal, more like the sound of the voice in its natural state. Suffice it to say, all the phenomena which have been described as accompanying this condition of the brain, slowly and gradually disappeared, as the healthful vigour and tone of the system were again re-established.

The child is still alive and in the enjoyment of *unusual health*, and although his head may be a "*mite too large*" for graceful proportions, he is a stout and healthy boy, and in intellectual vigour, not a whit behind the foremost of his age. I have oftentimes had occasion to notice the little fellow, but never as yet have been able to discover the least traces of any thing which would excite *a suspicion* of his early troubles.

Case II.—This is a case of congenital hydrocephalus, and occurred in the daughter and only child of Mr. S. Its history is soon told. Nine days after the birth of the child, my attention was directed to a strong impulsive tumour, which seemed to rise abruptly from the brain through the anterior fontanelle. It was about the size of the flattened half of an English walnut, and when compressed, evidently produced much distress. The pulsations of the tumour corresponded with the action of the heart and arterial pulse, and was owing to the rise and fall of the brain accompanying this action.

An examination of the head was made by means of auscultation, but without discovering any thing unusual in the physical signs of the brain, except it might be in the sound of the voice. Compression being made directly over the apex of the tumour, through the fontanelle, I noticed that a very slight and faint bellows-sound was developed. This ceased the moment the brain was relieved. The child was naturally feeble, and had never increased much in the size of its body or in strength, and now it began to be afflicted with frequent convulsions and fits. The operation for drawing off the water was performed upon the child at three different periods. At the first trial, three ounces of a turbid, milky fluid were discharged, and it was judged that in addition to this, about the same quantity leaked away during the day and night succeeding the operation. The fits did not recur again for three weeks. On their recurrence, the operation was performed the second time, and three or four ounces of a similar fluid were drawn away. Sixteen days had elapsed, and the operation for the third time was performed with similar results, the interval between the occurrence of the fits growing shorter and shorter after each succeeding operation.

Auscultation, ever after the period of the first operation, discovered none of the usual phenomena, which have been found to accompany other cases of dropsy of the brain; and the operations having at length been discontinued, convulsions closed the miserable existence of my little patient.—Owing to the unwillingness of the friends, no examination of the body after death was made.

Case III.—This patient was a child of Mr. D——, and like the one which forms the subject of Case 1st, had enjoyed perfect health up to the period of its first dentition. During this period, which was protracted and painful, I was informed by its *medical attendant*, that the child had suffered from "all the symptoms of an aggravated form of acute encephalic inflammation." The first access of the disease was unusually rapid and severe, amounting almost in this respect, to the suddenness of attack of that disease which constitutes the "*apoplexio hydrocephalica*" of Cullen, or the water stroke ["Wasserschlag"] of Gölis. Vomiting and convulsions, which were among the earliest symptoms, were soon followed by a state of somnolence and stupor; dilatation of the pupils of *both eyes;* and strabismus *of the left one;* and indeed, so rapid was its onset, that scarcely had three days elapsed, before the countenance of the child, which usually beamed with beauty and intelligence, was changed into an expression of the most stolid and unmeaning idiocy.

For upwards of three weeks, the child continued in this state, without any striking or material change, every day bringing with it the assurance and consolation, that death would soon relieve it from the pangs of such unutterable suffering and distress. About the end of the fourth week, its peculiar physiognomeal expression began to change, and the state of deep and undisturbed somnolence in which the child had for a long time reposed, to be interrupted by a more wakeful one. The agonizing shrieks and cries of the child, which had only seemed to render its repose the more appalling, moreover, gradually became less and less frequent, and nature, once more, seemed to be rallying her forces for the last struggle between life and death. From this time the health of the child gradually improved, attended with a slow and gradual enlargement of the head; and continued so, without any particular interruption, except an "occasional fit," until June 2d, 1840, three months and eleven days from the time of its first attack.

At this date, the period at which I first saw the child, it presented the following appearance. Head much enlarged, and measures 17½ inches in circumference. The frontal, and the posterior periphery of the parietal bones very prominent, which, together with the separation which has taken place in the latter, along the sagittal suture, gives an appearance of broadness and flatness to the coronal region of the head, which is quite singular. The anterior fontanelle remains unclosed and measures an inch and a half in its longest diameter, and through it, the pulsations of the brain are quite perceptible. The integuments directly over this part, and along the coronal and sagittal sutures, are more prominent than natural, while the skin over the forehead wears a contracted and shrunken appearance. Its countenance is dull and stolid, and its look of idiocy is much enhanced by the slavering protrusion of the tongue from the mouth, and the continual nodding and oscillatory movements of the head. The skin is loose and hangs in folds over the lax and attenuated muscles of the body. The mental powers appear irretrievably ruined, and the bright intellect which had once shone forth in its sprightly and happy movements, has experienced a sad wreck in the general disorder of its brain.

The cephalic bellows-sound in this child also, is very distinct and can be easily recognized by any one, whose attention is directed to it. It is "coarse, abrupt, rasp-like," and synchronous with the pulsatory motions of the fontanelle and with the action of the arterial pulse. It is audible over every portion of the cranium, and cannot be confounded with any other cephalic murmur. There is another sound also present, heard only during

the cries and screams of the child. It is peculiar, loud, shrill and trembling, and differing from the sound of the voice as heard in most subjects and from the cephalic bellows-sound as already described. As in other cases, compression upon the carotids, sufficient to impede the circulation of blood in the brain, caused a total suspension of this latter abnormal murmur; it affected in no way, however, the unnatural ægophonic sound of the voice, which has been described as being present in this peculiar affection of the brain. Compression, on the other hand, made upon the fontanelles instead of diminishing, evidently increased the intensity of the bellows-sound.

An operation for the relief of the child was recommended, but at once rejected. Bandaging the head tightly, with the internal use of such remedies as *perhaps might be* of service to the unfortunate victim of so formidable a disease, were consequently substituted. From this time, the child was lost sight of, until the succeeding November, about six months from the time of the first date.

November 20th.—I was again consulted in regard to the condition of this same child. Its general health has but little improved. It is still unable to walk, or to articulate words in the least degree, and is scarcely able to distinguish the most perfect stranger from its most intimate friends.

Its mental powers have in no way recovered from the shock of the disease. Idiocy is stamped upon every line of its countenance, in spite of the "*wit and intelligence*" which its loving parents can see "*sparkling from its eyes.*" The tongue still hangs drivelling from the mouth, and the head is still lopping from side to side, while the awkward and unmeaning gestures, which, ever and anon, it makes with its arms and fingers' ends, the "*childish pranks*" upon which its fond parents formed their imaginary, but delusive evidence of its remaining wit and cunning. Its fits still recur at intervals, increasing both in the frequency and severity of their attack. The sutures and fontanelle remain as before, and ossification seems scarcely to have progressed a single line. The cephalic bellows-sound is heard quite distinct, and the other phenomena of the brain are the same as on my first examination. Tapping was again recommended, not however with the hope of restoring the brain to the full enjoyment of its healthy and ordinary functions, but as the only means which art could devise, for relieving *the body* of a so cumbersome and unwieldy load. The proposition was acceded to, and with much less reluctance than I had anticipated. Suffice it to say therefore, the operation was performed and in the usual way, by which eight ounces of a thin, milky fluid were discharged from the brain at a single drawing. A similar change in the character of the phenomena, which had been developed and manifested during the progress of the disease, was noticed to take place, as in the other cases. Under the influence of a steady and long continued pressure, the head was again returned to its ordinary proportions, and a healthful vigour, comparatively speaking, was restored to the b dy again. But not so with the brain: no power of art could again restore to *this*, its primeval and healthy organism. Disease had already done its work of devastation, and the last ray of intellect, which had once beamed so brightly from it, had been for ever extinguished.

In the Fourth place, I have noticed the cephalic bellows-sound in actual and local compression of the brain.

Mr. S——, the individual who forms the subject of this case, is a young man 23 years of age, and formerly a resident of Newfield, Me. About five years ago, Nov. 1838—while "*coasting down hill,*" and descending with

very great velocity, he was suddenly brought up, "*head foremost*," against a large rock, which lay in his pathway, partially concealed beneath the snow. The blow took effect on the anterior portion of the left parietal bone, causing a very evident depression of the bone at this point. This state of things was soon succeeded by the occurrence of epileptic fits, the first one taking place but a few months from the time the injury was sustained. Previous to this, however, he had often experienced a dull, heavy, oppressive pain, about the region of the injured part, especially when stooping, with the head and body downward. The immediate accession of the fit was ushered in by a very severe and circumscribed headache, located directly over the region of the depressed portion of the bone. After the first fit, the dull, heavy pain about this part became more common; accompanied with a sensation, "*as if a heavy weight were pressing upon it.*" Before the accident above mentioned occurred, he had always enjoyed uniform good health, "*never having had occasion*," to use his own expression, "*to call a physician for a single day.*" *Ever after*, however, a continual and unremitting headache brooded over him, from which only a temporary relief could be obtained, by the most active use of blood-letting and purging. But a few months had elapsed after the *first* before the *second*, and third and fourth attack followed each other in such rapid succession, as to awaken the most serious apprehension for their final results.

In 1841, about three years from the time of the accident, he was admitted into the Massachusett's General Hospital, and was there advised by Dr. Hayward to have the depressed portion of bone removed, by the *Trephine*. But buoyed up with the delusive expectation of being cured by the "restorative powers of nature alone," the operation was not submitted to.

In July, 1842, I was called, for the first time, to see him "in a fit." I took occasion, therefore, during the state of insensibility into which he had been thown, to examine the brain, in this condition, and also the physical signs which might be connected with it. On applying my ear carefully to the head, I was not a little surprised to find the same physical phenomena present here, as in the most simple form of cerebral congestion. They were perfectly distinct and audible, but gradually diminished, as sensibility again returned. On examining the external condition of the head, I at once detected the spot which was the seat of all his trouble. Convinced of the inutility, therefore, of any remedies while a portion of bone was thus *locally* compressing the brain, I strenuously advised him to submit to an operation, as the only means which art could afford him, for a speedy and perfect cure.

Anxious to be freed from a disease so troublesome, and at the same time so dangerous to one, whose daily avocation led him amid the whirling machinery of a cotton mill, the proposition was readily acceded to.

July 25th, therefore, a portion of bone, one inch in diameter, was removed from the head, directly from over the point where the depression of the skull was the most evident. The bone adhered to the *dura mater* by several small attachments, which were, however, easily torn away, and the integuments of the brain laid bare. The brain, at this point, *was exceedingly tender and sensitive to the touch; the least pressure upon it*, with the finger or handle of the knife, *producing the most exquisite pain.* The *exserrated* portion of bone had scarcely been removed, when the patient expressed himself as experiencing a sensation of the most pleasing relief. The "load" which had so long and so heavily pressed upon the brain, had been at once removed, and he felt an exuberance and buoyancy of spirits returning, to which, for a long time, he had been a stranger.

Circumstances forbade any examination of the head being made at the time, or immediately succeeding the operation. On the following day, however, I could discover nothing abnormal about the condition of the brain, either by any of the rational or physical signs of this organ. I noticed, nevertheless, that by pressing pretty forcibly upon the brain, through the opening which had been made in the skull, a very distinct and audible bellows-sound *was created*. It was not so distinct, to be sure, as the sound which I had previously heard, during the state of insensibility which had succeeded the fit, but it was sufficiently distinct to be easily recognized, and to identify it with the common cephalic bellows-sound. It should be stated, moreover, that pressure upon the brain, after the manner prescribed above, sufficiently powerful to develope *a true bellows-sound*, occasioned the most intense suffering and distress to my patient, inducing, at the same time, a feeling similar to that which he had frequently experienced previous to the occurrence of the fits.

It is now nearly one year since the operation, and he has never, but once, during the time, experienced the least symptom of their recurrence; and that was occasioned by a severe blow, which he accidentally received upon the head, directly over that portion of the brain which had been left unprotected by the bone. He has since that time, moreover, passed through a long and severe stage of typhoid fever, brought on by exposure and excessive bodily exertion, without the presence of any important cerebral symptoms supervening upon it. And at the present moment, he is in the enjoyment of full and perfect health, and free from the least trace of any thing which might excite the remotest suspicion of his former troubles. I have thus given a brief resumé of this important and highly interesting case: the presence of the cephalic bellows-sound having formed the chief inducement for mentioning it here, while a fuller and more detailed account of it has been reserved for *another place*.

Observation *Fifth*.—This physical phenomenon of the encephalon has been observed also in *induration, or scirrhous transformation of the substance of the cerebellum*.

Case.—*January* 21, 1842.—I was called to attend the daughter of Mr. C——, aged eight years. For about two weeks previous to my visit, she had made frequent complaints of a severe pain situated in the right side, just below the hypochondrium, attended with extreme costiveness and loss of appetite. Otherwise than this, she appeared in her usual health, never having been of a constitution so strong and robust, as that of children in general. Her complexion, which is of a *pale lemon colour*, her lustreless eye, the state of *cachexia*, and the sad dejection of her countenance are signs, which, connected with the disordered state of the digestive function, and the languor of both mind and body, are of no ordinary import. In this state of things, the *pain continued*, without suffering any material change, except a temporary amelioration, for six or eight weeks, in spite of every variety of treatment which prudence could dictate. At the end of this period, she began to experience some slight pains in the head, with an excessively annoying, prickling sensation between the first and second vertebræ of the neck; the pains in the head and neck, alternating with that of the abdomen. Within fifteen days from the time of their first access, they had increased so much in the length and severity of their paroxysms, as to elicit from my little patient the most agonizing and heart-rending shrieks.

There was most generally an exacerbation of the paroxysms during the afternoon and first part of the night.

There were usually from *three* to *six* of these during twenty-four hours, each from thirty-five to forty minutes in duration, accompanied with a slight febrile action, which soon died away as the severity of the paroxysm diminished. *These pains*, like the primary one in the abdomen, seemed to be *little influenced* by the action of remedies, continuing for nearly three months, without any perceptible change or alteration in the rational or physical signs which attended them. It was pretty evident, however, although up to this time, April 17th, I had never been able, by the most careful and repeated examinations of the head by auscultation, to discover any physical sign by which the disease was marked, that there did exist some undefined and obscure lesion of the brain. Three days previous to this date, a new set of symptoms had suddenly supervened, which gave a more open and decided character to the disease in question. Cold rigors, nausea, vomiting, *deep and acute lancinating pains* about the posterior and lower part of the brain, aggravated to the highest degree by an uncontrollable spasmodic affection of the muscles of the nape, were symptoms which could not easily mislead; and singular as it may appear, these symptoms, which were so violent as to require the constant interference of art, never for one moment abated their severity, (except under the action of the most powerful narcotics,) until *the disease itself* had so far benumbed and paralyzed the sensibility of the brain, as to render their presence the less apparent.

It was at this period of the disease, that I first was able to detect the presence of any unnatural sound in the brain. But now, on applying my ear to her head, I can hear a very distinct and audible bellows-sound, together with a slight *impulsive murmur*, which I had never before noticed accompanying this phenomenon. This murmur is quite peculiar, and resembles very nearly, though much fainter, the impulsive sound of the heart when heard through the indurated substance of a lung.

These *two* sounds were not exactly synchronous with each other, the one succeeding the other at the least possible interval; the bellows-sound being prolonged a little beyond the duration of the other sound, in the same manner as *the bruit de soufflet of the heart* is prolonged beyond the impulsive and diastolic sound of that organ.

Compression of the carotids at once obliterated the bellows-sound, while the impulsive murmur was in nowise affected. I noticed these symptoms frequently, and uniformly found them bearing the same relation to each other, as I have already described.

June 6th. A little more than *four months* from the commencement of her illness, her extremities, together with the lower part of the abdominal viscera, became affected with paraplegia; and ever after the evacuations of urine and fæces were, of consequence, involuntarily voided.

The physical signs which I have before noticed as accompanying this disease, have also suffered a change. The "cephalic bellows-sound" is still quite distinct, while the *impulsive sound* has entirely disappeared. The pains in the head, in no way lessened, have also continued in paroxysms, at longer or shorter intervals, up to the present moment. There are, moreover, present, *double vision*, *dimness* of the sight of both eyes, dilatation of the pupil of the left, and strabismus, with dulness of hearing, and some slight paralysis of the muscles of the face. The intellectual faculties remain intact. I should have mentioned, that succeeding the state of paraplegia, the appetite

became insatiable, large quantities of food being daily consumed, without producing in the stomach the least possible inconvenience.

Matters remained nearly in this condition for nearly *three* weeks, the hearing gradually becoming more and more obtuse, and the vision less and less distinct. I also noticed, at this period, a slight change or modification of the natural sound of the voice, which I had not before heard in this case. It is the *cerebral or encephalic ægophony*, which has been described in a previous case, and which is found to accompany an extravasation of fluid in the cavities and over the membranes of the brain. It was less obvious at this, than at a later period of the disease; sufficiently so, however, to render its identity certain.

The cephalic bellows-sound is still quite distinct, and continued so up to the time when I last saw her, about three weeks previous to her dissolution. I never could discover any recurrence of the *impulsive sound* after the attack of paraplegia. She died at last in a state of apparent asphyxia, brought on as was supposed by her friends, by "a fit of apoplexy." Her intellectual faculties, memory, and judgment, remained untouched to the last; while the organs of sense, one by one, seemed gradually to fail, until the vision had become darkened, the hearing obliterated, and the sense of taste and of smell utterly annihilated.

A severe illness, by which I was confined at the time of the death of this patient, prevented me from examining the morbid changes in the structure of the brain, which I was extremely anxious to discover. Circumstances also prevented any accurate examination of the viscera of the different cavities of the body. The brain was, however, examined by my pupil, Mr. Mason, with the assistance of a neighbouring physician, and from notes preserved by him, I am enabled to present the following statement of the pathological appearances which were exhibited after death, in the substance of the brain.

"On removing the calvarium, the vessels of the *dura mater* were seen swollen and turgid with dark blood. This membrane was but slightly attached to the skull, of a dirty colour, and somewhat thickened in *texture*. Upon its exterior surface, scattered here and there, were cartilaginous granulations, varying in size from a millet-seed to that of a small pea. The substance of the cerebrum appeared in a healthy state. The optic, auditory and olfactory nerves were particularly examined, and found healthy in appearance. Over the surface of the brain, within the cavities of the arachnoid and in the ventricles is found an *unusual* accumulation of a thin, semi-transparent, and slightly turbid fluid, to the amount of five or six ounces. The cerebellum was almost completely disorganized: one lobe being completely softened, and about the consistence of thick cream, and of a dingy yellowish colour, and the other *hard, indurated or scirrhous*, with a softened portion in its interior. This lobe, when cut into, appeared hard and tough, like recent cartilage." A portion of this, which was preserved in spirits, now presents the appearance of thick putty, and is of a dense, fibrous structure, containing in its centre a cavity, from which the softened matter has been washed away by the spirits used for its preservation.

I shall speak, in the *sixth place, of the cephalic bellows-sound*, as a symptom of *ossification of the arteries of the brain.*

Mrs. E., the subject of this case, was an elderly lady, of some 70 years of age. I was first called to see her July 10, 1840.

Returning home after the fatigues of a somewhat protracted walk, and a visit to one of her neighbours, where she had *unsparingly indulged* in those

tea-table luxuries so bountifully spread on such occasions, she was suddenly siezed with the common symptoms of *cerebral apoplexy.* I saw her soon after the attack, and found her in the following condition, which I transcribe from my Note Book for 1840.—Her breathing was stertorous, slow and deep. Pulse hard, full and throbbing, and preternaturally slow. Face flushed, and the vessels of the head turgid with blood, and prominent from the surface. There was complete loss of consciousness with profound coma and hemiplegia of the left side, indicating an apoplectic effusion into the right hemisphere of the brain. I immediately ausculted the head, expecting to discover the "impulsive sound" spoken of by Dr. Fisher, in his Observations on Cerebral Auscultation, as connected with this particular condition of the brain. I did not, however, discover that sound, but another and wholly different one; and which, taken in connection with the particular case I am about to describe, is a symptom of a peculiar pathognomic interest.

A confused, rough, *blurting* sound, as of a fluid rushing through a tube of a rough, unequal calibre, immediately struck upon the ear. This sound was confined to no particular portion of the cranium, but was heard, with almost equal distinctness, over every portion of it. The recurrence of the sound was by no means frequent, corresponding with the slow and retarded action of the arterial pulse. It was more prolonged, much coarser and less abrupt, than the bellows-sound which has been described in the previous cases, peculiarities which were evidently owing to some other and very different causes.

The patient being plethoric, copious venesection was employed from the arm, and the most rigid and antiphlogistic treatment prescribed.

July 11*th.* To-day I found her nearly the same. The coma was not so profound; and when addressed, she aroused herself, as if conscious of the presence of some one; relapsing immediately into the state of drowsiness, until spoken to again. General bleeding, with the local abstraction of blood by cups from the nape of the neck, was employed, and the internal antiphlogistic treatment continued.

12*th.* Much improved; coma less profound, although a drowsy heaviness still remains. Respiration quite natural when awake, but relapsing into the stertorous when suffered to fall asleep. Hemiplegia of the left side still continues. The sound elicited by auscultation is the same rough, confused and *blurting* one already described, though *its intensity* is much diminished, while in frequency it corresponds with the increased action of the heart and arterial pulsations. This was the *"cephalic bellows-sound"* before spoken of, modified; *this change in its character being owing to some specific change in the condition and character of the blood-vessels of the brain.*

From this state she advanced to nearly a state of complete recovery; some slight hemiplegia always remaining, and the sounds detected by auscultation never being absent from the brain on future exploration.

The reasons which induced the belief that this was a symptom of some chronic and organic change in the blood-vessels of the brain, which had existed a long time prior to this first apoplectic attack, and which was now rapidly advancing to its consummation, are the following; and I state the facts as they were given me by her friends, they occurring previously to any professional or friendly acquaintance of my own with the lady, and of course relate to matters with which, from this cause, I could not be professionally conversant, or obtain any knowledge of, except through this medium.

About two years prior to my first visit to Mrs. E., a very striking change in her character and temperament began to be noticed by her friends.

At the time I saw her, in a phrenological point of view, she would have been considered as possessing a "dull, lymphatic temperament," but by nature she was of the nervo-sanguine. Naturally she was witty, talkative, and a woman "extremely fond of visiting her neighbours," and full of "lively gossip." She was quick and active in the movements of her body as well as in the functions of the brain. Any change therefore, from such a state of circumstances as this, would be more marked, than any similar change in one whose actions and emotions were more obtuse or of a duller cast. But the alteration was the more remarkable in this case, as it comprehended a complete revolution, not only of the mental, but also of the physical faculties in like manner. From being garrulous and witty, she became silent and morose. From a state of apparent unconcern and inattention to the cares of this life, she became melancholy and brooded over such imaginary troubles as had no existence except in the wandering fancies of her brain. Her quick and lively gait gave place to wavering and uncertain footsteps; and by the slightest impulse she was almost sure to be overturned. Her appetite also became insatiable, scarcely allowing any bounds to the immense quantity of food which she daily consumed; and nothing, but a vague hallucination with which she had become impressed, "*that they were coming to want*," could have any influence in restraining it at home. But when abroad, no visions of poverty, and no terrors of want had any power to check her, as she gave free course to her unbridled desires. From such a state of things, plethora and an extreme predisposition to attacks of cerebral apoplexy, might naturally be expected.

Returning then, from one of her neighbours, after having, in her usual manner, made the most unlimited appropriation to herself, of the rich luxuries which had been set before her, she was suddenly attacked, as I have before stated, with the common symptoms of cerebral apoplexy. She, however, in a great measure, recovered from this attack, but never regained the natural functions of her mind. On the contrary, during the eighteen months which intervened between this first and the second attack, her mental faculties became more and more enfeebled—her eye-sight failed her,—she ceased to recognize her nearest friends,—locomotion ceased, and idiocy was stamped upon every line and lineament of her face.

During all this length of time, the bellows-sound of the brain was an unfailing symptom, and auscultation of the head, whenever and wherever it might be made, never for once failed to recognize it. It was always synchronous with the action of the heart, and only varied in clearness and distinctness as the circulation varied in strength and impetuosity.

September 23, 1841. She was attacked for the second time with an "apoplectic fit," from which she never obtained any remission or relief.

Autopsy.—Head.—On removing the calvarium, the dura mater was found in many places strongly attached to its walls. The vessels of this membrane were also engorged with blood, *and universally incrusted with a thick coating of an ossific or calcareous matter.* On cutting into the substance of the brain, a distinct grit was felt under the knife, such as follows the cutting of a piece of dried sponge. The vessels at the base of the brain, and their ramifications throughout its substance, were completely covered with a calcareous deposit. This seemed to be confined to the outer layers of the arteries, the inner and lining membrane of these vessels being thickened and rugose.

On making a section of the cerebrum, through the centrum ovale majus, about the middle of the right hemisphere, a cicatrix was discovered and the

traces of the coagula, caused by the apoplectic extravasation 18 months previous. About six lines below this, was the sanguineous effusion which had occasioned her death. The substance of the brain was hard, of the consistence of putty, and when cut, its vessels produced the gritty sound I have before described. About the cicatrix of the old effusion the substance of the brain had become softened.

Thorax—Lungs healthy, some slight ossific depositions about the valves of the heart, especially the aortic.

Abdomen—not examined.

In the 7th place, the cephalic bellows-sound has been observed accompanying *an aneurism of the basilar artery.**

Case.—Aneurism of *the basilar artery* is a disease of such rare occurrence, the pathognomic and physical signs of which are so obscure, and so little understood, that I shall be pardoned, if, in giving the history of this case, I may seem more prolix than its importance might appear to demand. This disease, being beyond the reach of art, must from its very nature and locality, inevitably prove fatal; and although no knowledge or consideration of its physical signs can in any degree lessen the certainty of so painful a prognosis, yet the importance as well as satisfaction of forming a well grounded diagnosis, of every variety of disease, which may fall under our observation, and thus lessen the chances of error and perplexity into which every one is so liable to fall, render an acquaintance with these physical signs a matter of no small moment.

January 15th, 1841. I was consulted by Mr. S——, aged 37 years, in regard to the nature of a complaint which, he had been told, arose from an affection of the heart. The particular symptom, which was the more immediate cause of trouble to him, was a continued and uninterrupted *buzzing* or *whizzing* noise in his head "*as though*"—to use his own quaint language—"*a swarm of bees had made his head their hive.*" This symptom, together with an obstinate headache and deafness which had induced an extremely nervous and irritable state of the mind, were indications which demanded something more than a passing consideration.

Having for a number of years laboured under hypertrophy and dilatation of the left side of the heart, he had been induced to believe, that the present indication of trouble about the head, "could be nothing more than the noise produced by the impetuosity with which the blood was thrown into the brain." Accompanying this peculiar *whizzing sound* he occasionally experienced something more than his ordinary dulness of hearing. This, however, was only temporary, and never prolonged more than a few minutes at a time. During these moments of temporary surdity, the buzzing sound before referred to, entirely vanished, returning again, however, so soon as

* Dr. Tweedie, in the second volume of his "Library of Practical Medicine," speaking of auscultation, as a means of discovering the presence of aneurisms of the cerebral arteries, observes: "Examples of this disease in a sacculated form have been met with even within the cranium, in the internal carotid, vertebral and basilary arteries. In these latter cases the symptoms have been very obscure, such as obstinate headaches, singing in the ears or deafness, with more or less derangement of the sensitive and intellectual faculties, and finally apoplectic fits. *It is probable, however, that the careful employment of the stethoscope would, in some of these cases, reveal the existence of a bellows-murmur and facilitate their diagnosis.*"

the deafness had passed away. He has also been subject to frequent attacks of epistaxis, and thinks this affords him oftentimes the most decided relief from that most annoying symptom, the buzzing noise in the head. Once in two or three weeks, moreover, he is troubled with a most violent cephalalgia, which is relieved only by the recurrence of the hæmorrhage from the nose. In years gone by, he had frequent recourse to copious venesection; this, however, he had long since abandoned, as a remedy of only temporary and exceedingly doubtful utility.

On applying the stethoscope to the region of the heart, the head and ear are forcibly propelled from the surface of the thorax, over a space extending between the third and seventh ribs. The whole volume of the enlarged organ seems to rise up and to come in forcible contact with the thoracic parieties at every pulsation; and as it falls back again, the "back stroke" or "diastoltic impulse" spoken of by Dr. Hope, and ascribed by him to the refilling of the ventricles, is distinctly heard. The impulse of the heart is strong and hammer-like, and its first sound, which is heard, equally, over almost every portion of the chest, terminates in a sort of prolonged "*bruit de soufflet;*" the second sound being but little changed from its natural state.

The impulse of the abdominal aorta is readily felt through the abdominal walls, and by applying my ear to the back, directly over the course of this vessel, a continuation of the bellows-sound, which terminates the first sound of the heart, is distinctly heard, extending up and down the spine along the track of the vessel. Nearly opposite to the last dorsal vertebræ and on a line with the umbilicus, I also heard a very distinct "purring and thrilling sound," which is said to be characteristic of an arterial aneurism. The sound is heard over a space covering four or five square inches. A similar sound, though much fainter, is heard over the upper part of the sternum and the right clavicle. On applying my ear to the head of this gentleman I was immediately struck with a singular phenomenon which presented itself, and which I at once recognized as the very "*bruit de diable*" which had been the source of so great trouble and annoyance to him.

The exact character of the sound, I have discovered, it is impossible to describe; and yet it is so unlike any other sound which I had ever heard in the brain, that it would be difficult, when once recognized, to confound with any other cephalic murmur. It is harsh, rough and accompanied with a *purring*, vibratory thrill which seemed to be communicated to the whole brain. It is quite distinct and audible over every portion of the cranium, and especially through the external auricular foramen of the patient himself.

The *purring* sound or thrill, which renders this murmur so exceedingly unique, is continuous and seems to be prolonged beyond the ordinary duration of the pure bellows-sound of the brain. It accompanies the systole of the heart and consequently corresponds in frequency with its pulsations. Compression made upon the carotids very much enfeebled the sound, never entirely obliterating it, but mellowing it down to a simple bellows murmur.

On describing the peculiar nature of the sound which I had heard to the individual himself, he at once noticed its similarity to the sound which was so unpleasantly and continually audible to his own ear.

I had occasion frequently after this to notice this phenomenon. It was always present, and never for a moment ceased to annoy and disturb the comfort and well-being of the man.

August 22, about seven months from the time at which I first saw this gentleman, being in possession of his usual health, while in the act of stoop-

ing, to raise his little son in his arms, he suddenly fell prostrate upon the floor a corpse.

The following appearances were presented after death.

Exterior—The expression of the external features is much like that of individuals dying in a state of asphyxia.

Thorax—Lungs healthy though much engorged with blood. Heart enormously enlarged, having become *globular* in its shape, occupying a very considerable portion of the thoracic cavity and lying transversely across it. The thickness of the parieties of the left ventricle was but a few lines less than an inch, while its cavity was distended to such a degree as to be capable of containing a bulk equal to that of a full sized coffee cup. The hypertrophy and dilatation of the right side were less marked. The auricles retain their usual size and appearance. The aorta, from its origin upwards, seemed to be in a state of uniform dilatation. From the arch of the aorta, was an aneurismal enlargement of the vessel, extending along its calibre for the space of one and a half inches. The trace of an incipient aneurism was also discovered in the arteria innominata, near the origin of the right carotid. In the *abdomen*, there was a cylindroid aneurism of the descending aorta, such as has been described by M. Breschet, commencing just below the points where the superior mesenteric and renal arteries are given off, and an evident dilatation likewise of the right external iliac.

Head.—Vessels of the dura mater much engorged, and the grooves which formed their beds in the skull, seemed unnaturally deep and furrowed out. Those of the arachnoid and pia mater also congested. Substance of the brain natural both in colour and consistence.

On prosecuting the dissection still farther, and an opening being made through the longitudinal fissure, which separates the two lobes of the cerebellum, toward the base of the brain, a large quantity of loose and coagulated blood was found, extravasated in and about the substance of the cerebellum and lower portions of the cranium. On cutting away portions of the cerebellum at this point, nearly down to the medulla oblongata, I notice directly over the pons varolii, and in the situation which is usually occupied by the basilar artery, the loose edges of a ruptured sac, of no inconsiderable magnitude. A more particular examination at once showed it to be the wreck of an aneurism of the arch of the basilar artery at this part. Appearances seemed to indicate that it must have been not far from the size of a common prune, and of an oblong shape. The fibrous structure of the pons varolii, which in its natural state is so easily recognized, had degenerated into a hard, homogeneous mass. The identity of the sixth pair of nerves, with the thick bundle of filaments of the fifth and also of the seventh pair, amid the bloody and disorganized condition of the parts, could with difficulty be made out. The substance of the cerebellum, about the position of the aneurismal sac, from the long continued pressure which had been made upon it, had become hard and inelastic. Other portions of the brain and medulla oblongata appeared sound.

I shall now speak, *in the 8th and last place*, of the cephalic bellows-sound, together with *one other physical sign*, which I have observed concomitant with, or rather growing out of, this sound, as connected with *a certain hydrencephaloidal disease, and a general state of anæmia.*

The class of hydrencephaloidal diseases, which was first noticed by Dr. Abercrombie, and afterwards more particularly described by Drs. Marshall

Hall and Gooch, received its name from its near resemblance to the *true hydrocephalus.*

The consideration, therefore, of the physical phenomena of a disease which has this remarkable peculiarity, that it produces symptoms which are analogous to, and with difficulty distinguished from those of the severest and most dangerous form of cerebral inflammation, while it depends upon a cause diametrically opposite in its character, cannot be ill-timed nor out of place.

Inflammation, as is well known, is the state of the *most active hyperæmia.* The affection to which we allude, on the contrary, not only accompanies, but is dependent upon a state of anæmia or exsanguinity of the system, which is hardly compatible with life. Indeed, it is the *ghostly pallor of the whole exterior*, which forms the most striking peculiarity of this disease; and since dissections show that the largest and deepest vessels are nearly as destitute of blood as those of the surface, the degree of *pallor* without must be distinctly expressive of the degree of exsanguinity within.

What the exact state of the circulation within the brain may be in this disease, is a matter of some dispute. Marshall Hall speaks of *two* stages as belonging to this affection; *the first, that of irritation; the second, that of torpor.*

"In the first stage," observes this writer, "there are feverishness and sensibility to noises, or on being touched; rapid breathing; sighing and moaning; flatulence and looseness of the bowels; mucous and disordered evacuation."

In the second stage, "the countenance becomes pale; the cheeks cooler or cold; the pupils immovable; the breathing irregular and suspicious; the voice husky; cough makes its appearance, and if the strength decline still farther, crepitus and rattling in the breathing; the evacuations usually are green, and the feet are apt to be cold."

In addition to the symptoms which are laid down by Dr. Hall as marking the different stages of this disease, we also find others, such as throbbing pains in the head, buzzing or whizzing noises in the ears; intolerance of light, convulsions, delirium, &c., all of which are equally present, and mark the first and the stage of excitement of this disease.

During this stage, the head is, unquestionably, the seat of an *atonic diaxis;* the meagre and impoverished condition of the blood being ill adapted to recompense the wants and vitality of an organ of such exceedingly delicate sensorial powers as the brain.

The other states, that of coma, stupor, listlessness, paleness and coldness, on the contrary, bespeak *an atonic congestion* of the organ.

This disease has been spoken of by some late distinguished writers, as being *peculiar to*, or at least as occurring *most frequently* in infants or children between the ages of 1 and 3 years, less frequently in elder children, and still *more rarely* in adults. So far, however, as my own experi-

ence goes in this matter, it by no means accords with this fact. I have quite as frequently had occasion to notice this disease in adults, as in infants or very young children; and in every instance where I have noticed it in adults, it has uniformly occurred in *females* whose systems had been for a long time subjected to the depressing and enervating influences, and the *concomitant evils* of a "factory life." And in no case has it occurred, in which it could not be almost immediately traceable to some obvious cause of a more or less rapid exhaustion of the *blood and nervous system.*

The state of anæmia which invariably accompanies this disease, is in infants most frequently induced by constant or long continued diarrhœa; by improper food; by painful and protracted dentition; by leeching and unnecessary bleeding; or by purgatives injudiciously and improperly employed and persevered in. In adults it is also brought on by "tedious and long neglected diarrhœa;" by frequent and copious hemorrhage from any part of the body; by the exhausting and enervating influence of habitual masturbation, and the long continued and frequent indulgence of the appetite in the use of chalk, charcoal, nutmegs, cloves, brick, lime and many other equally deleterious and disgusting appliances, which a depraved and morbid appetite is so apt to crave.

As has already been stated, this disease, which is induced by so many and so varied causes, in its more aggravated form, especially in infants, so nearly resembles certain of the more acute and dangerous forms of cerebral inflammation, that it becomes a matter of the most absolute necessity to be able, timely and properly to discriminate between two affections, *apparently so very similar, and yet so very dissimilar.*

I shall, therefore, now proceed to notice some of the more obvious, rational signs of this disease, together with one or two physical signs, to which particularly I beg leave to call the attention of the reader for a single moment.

The *first case* which I shall relate, occurred to me in a little boy, the son of Mr. G., aged 14 months. I was called to this child in a "convulsion fit." Previous to this, it had passed through a severe and protracted period of dentition. The child was naturally robust, but now under the depressing influences of teething, weaning, and an unwholesome diet, it had wofully degenerated from its primitive state. Then add to this the fact, that its parents, under the false impression that "*worms* were the sole cause of its troubles," had plied it with the most powerful and long continued drastic purging, and the prognosis of the disease, *whatever that might be*, could be any thing but a favourable one.

The purgative effects of the medicine had already degenerated into a most obstinate and uncontrollable diarrhœa. I found the child in this state of the most complete exhaustion, having but just recovered from the fit, presenting the following appearances.

In its mother's arms, it was lying with its head thrown backward; the mouth and eyes were but partially closed; the eyeballs were rolled upwards, and the cheeks suffused with a deep vermilion blush. The face, on the con-

trary, the head, the ears, indeed the surface of the whole body was stimu- and white like marble. The extremities were cool, while a degree of this about the rest of the system illy comported with the pale and cadaveric appearance of the body. The sensibility of the child was extreme. It was startled at the least *sudden noise* and at *the slightest touch.* Gritting the teeth, groaning, moaning, rolling and tossing the head were incessant. The respiration was hurried and *panting;* and the pulse rapid, *though it may be that it lacked the fulness which characterizes a state of active inflammation.* In addition to the foregoing symptoms, I also detected a strong and well marked bellows-sound in the head of the child. It differed in no way from the same phenomenon which I had been accustomed to associate with an acute inflammation of the brain. It was short, abrupt, rasp-like, and harmonized with the action of the arterial pulsations, and was 142 to the minute.

The disease was very naturally taken for that which its symptoms *immediately* indicated; namely, *acute inflammation of the brain;* and for three days, all the remedial agents usual in such cases, were plied with the utmost vigour. It was all, however, to no purpose. Every day found an aggravation of the symptoms of the preceding one; and it was not until the commencement of the fourth, in which every symptom had increased to such an alarming extent as to threaten immediate dissolution, that the *real nature* of the disease became sufficiently apparent. To-day, while every chance of life seemed to rest upon the hazard of a single throw, I had determined upon making one more and the last effort to suppress, as was supposed, a so violent hyperæmia of the brain. The temporal artery was accordingly exposed, opened, *and in the single jet of the pale, colourless, serous-looking fluid* which escaped from it, the truth of the whole matter, and the error of my own judgment at once flashed upon me.

This, then, was the condition of the blood, pale, thin, watery, and very nearly resembling, just what it was, pure serum, only slightly tinged with red. Wherever it dropped, whether upon the dress or upon the skin of the child, it scarcely left a stain of the faintest red colour, so far had it deteriorated from its original and healthy state.

All depletion, as a consequence, was now at an end, and for the strictest antiphlogistic treatment which had been so perseveringly persisted in, *tonics* of quinine and steel, stimulants of brandy and wine, with a diet of the most nutritious quality, were instituted without delay. A few days, under such treatment, soon evinced the propriety and judiciousness of the change, and a single week had scarcely elapsed, when the glow and sprightliness of returning life were witnesses of the sure and gradual renovation of the vital powers to their original and healthy state.

I will, *in the second place*, relate another instance of this disease, occurring in the *adult*, in which all the rational and physical signs appertaining to it, were developed in the most remarkable manner.

This case of anæmia and hydrocephaloidal affection, was in Mrs. H., a married lady, aged 28 years. She was the mother of two children, having given birth to the younger one about four months previous to my visiting her. She had recovered from her last accouchment as rapidly as most women, and during the month which immediately followed, had enjoyed her usual health and spirits; no untoward incident befalling her, until about the fifth week from her confinement. She now, for the first time, began to

be troubled with alternate costiveness and diarrhœa; the costiveness, however, soon began to give place, and to be superseded by a severe and most unrelenting diarrhœa. In this state she continued, with only an occasional intermission, for nearly *three months.* At different times during this period, the discharges were as many as twenty-five or thirty in the twenty-four hours; often from twelve to fifteen, and never less than from six to ten. The appetite now began to fail, with an occasional ejection of her food from the stomach. She also now began to experience some darting pains about the abdomen and chest, and especially about the region of the heart and liver; throbbing pains in the head; ringing and buzzing noises in the ears; weakness of the whole body, with a faint, gnawing sensation at the pit of the stomach. At this junction I was called to visit her. I was struck at the singular and uncommon appearance which she presented. Her actions, movements, countenance, every thing about her were expressive of the utmost lassitude and distress; her whole appearance was cadaverie in the highest degree. Her face, lips, and indeed the surface of the whole body, are of the colour of a dingy alabaster. The sclerotica of the eyes is of a bright cerulean colour, and her ears clear and semi-transparent, *like wax.* Ever and anon a bright vermilion flush mantled her cheeks, and soon gave way again to the universal pallor which pervaded the system. Her skin, which was harsh, dry, and hot to the feel, was tinged with a slightly yellowish, dirty colour. Tongue covered with a dry fur, and the inner part of the lips and fauces are nearly, if not quite as pale and colourless as the whole face. Her respiration, which is quite free and easy when quiescent, becomes hurried and irregular on the slightest exertion.

She has no pain which was constant or referable to any particular part, except in the head. This is constant, "throbbing;" occasionally attended with a momentary unconsciousness, and withal, to her the most troublesome and annoying symptom present. Oftentimes it became quite intolerable, requiring the head to be restrained between the hands, or tightly bound with bandages. There is also, sometimes accompanying this distress of the head, a sort of bewilderment of the senses, which is spoken of by her friends, as bordering upon a state of delirium. The eyes become intolerant of light, and the mind excited and irritable in the highest degree.

On applying my ear to the head of this lady, I at once very distinctly recognized the phenomenon which I have before described as accompanying this state of anæmia of the brain. I also noticed very distinct *bruit de soufflet* of the heart. *It is these two sounds which are the source of so much annoyance to my patient,* and especially when reclining for repose.

It is a singular circumstance connected with this phenomenon of the brain, that by compressing the carotids, a great variety of intonations in this sound can be produced, varying according to the different degrees of force applied. At one moment it is a regular *bruit de soufflet,* rough and diffusive; at another moment it is the *bruit de scie,* short and rasp-like; again it is soft and velvet-like, dying away with a faint musical tone; and still again the whole cavity of the cranium seems filled with a sharp, hissing sound, which occasionally becoming short and abrupt, produces a sound in almost exact imitation of the faint, nestling chirping of the little chick.

These sounds, as I have said, can all be developed by the exercise of different degrees of pressure upon one or both carotids; and it is worthy of note, that in a real and acute cerebral inflammation, this change in the character of the true bellows-sound is never noticed.

These symptoms continued, with but slight variation, except a short and

temporary amendment, which had followed the exhibition of some stimulating and chalybeate medicines for nearly two months. At the end of this time, during an interval of my visits, and contrary to previous advice, leeches, which had before been urged and strenuously rejected, were again recommended and applied by a friend, as the *only and sure relief* to the painful sensations and noises which continually haunted her brain. Three were applied to each temple, from the bites of which, for the space of *twelve hours*, the blood continued to ooze out, in spite of the utmost endeavours which were made to restrain it; and until the most alarming symptoms of exhaustion and syncope had supervened. I was again called at this moment, and found her in a state of the most hopeless insensibility. Her countenance, which before wore the *pallor of death*, was now *bleached* to a perfect whiteness. What little of colour and vitality formerly existed in her, were now almost entirely dispelled by the untimely and injudicious interference of friends. Every symptom now presented itself in its most aggravated form. The diarrhœa, which before, in a degree had subsided, now returned with redoubled frequency. The throbbing and beating sensations, which before had been confined to the head, were now transferred to every part of the body. Sharp, lancinating pains darted in every direction over the body; the pulsations of the heart became intermittent, and an universal œdema began to spread itself rapidly throughout the whole system.

The various phenomena, which I had previously noticed in the head, are now present with increased distinctness. The bellows-murmur, *bruit de scie* and chirping sounds, seemed to be mingled promiscuously together. The same musical sounds are also distinctly heard in almost every artery in the body. In the head, in the neck, along the spine, in the thorax and in the abdomen, over the thighs and in the arms, indeed, almost everywhere, were these phenomena present. The advice of the most eminent counsel could not stay the progress of the disease. The system sunk rapidly, beneath the exhausting drain which had been made upon it, and convulsions, delirium, coma and death soon put out the last feeble glimmering of life which remained.

Such are some of the rational, and such the physical phenomena, which belong to this disease. The cases, which have just been related, are extreme ones, yet in the numerous instances of this disease which have come under my observation, I have never known the more prominent of them to be wanting. A strictly hydrocephaloidal state is incompatible with any other condition of the system, except that of anæmia. It is not to be understood, however, that a hydrocephaloidal disease accompanies every instance of anæmia—on the contrary, there are daily occurring instances of this latter disease, without any of the signs which characterize the former.

I have seen numerous instances of excessive menorrhagia, and of chlorosis or anæmia of young females when carried to a high degree, accompanied by violent throbbing pains in the head, the *bruit de scie*, and musical sounds of the arteries of the brain, giddiness, sickness of the stomach, a rapid, jerking pulse, and exalted state of nervous sensibility, delirium and other symptoms of a cephaloidal inflammation, and yet every instance of menorrhagia or chlorosis is not to be regarded as a hydrocephaloidal disease, or even that of anæmia.

I have at this moment, two cases of amenorrhœa, or chlorosis, in young females, the one produced by *excessive onanism*, the other, by an habitual and long continued use of *charcoal and green tea*, in which all the symptoms of an excessive anæmia of the system were for a long time present, without any of the usual symptoms of an hydrocephaloidal affection manifesting themselves. When called to visit them, however, the one had already begun to be affected with spasmodic contractions of the muscles of *the left side* of the face, the left arm and left leg; had also the usual physical signs which accompany this state, with the most violent throbbing pains in the head and neck, a quick, jerking pulse, intolerance of light, hectic, the most extreme sensibility to the least possible noise and delirium. The other was attacked with epileptic fits. In both cases, *bleeding* and the *application* of leeches to the temples was most strenuously urged by their friends, while both, under the liberal and judicious exhibition of quinine, iron, &c. are rapidly recovering.

Profuse uterine hæmorrhage, or even the excessive loss of blood in any manner, is also known to produce symptoms analogous to these; and if long continued and the loss exceed a certain point, throbbing pains and buzzing noises in the head, dizziness, deafness, convulsions, coma and death inevitably ensue.

I have thus, at much greater length than I had contemplated, spoken of the various physical and auscultic phenomena, which are known to accompany certain lesions of the brain. They are such as cannot be detected in a truly physiological state of that organ, and are incompatible with it; they cannot be considered in any other light, therefore, than the *natural phenomena* of certain pathological conditions of the brain.

We have, then, *four* perfectly distinct auscultic phenomena, which are developed by, and which are characteristic of, *particular* pathological states of the encephalon. They are 1. *the cephalic bellows-sound;* 2. *the encephalic or cerebral ægophony;* 3. *the frémissement de cataire or purring thrill; and* 4. *the bruit de poussin, cooing or musical sound.*

The *first of these*, in a pure or modified state, has been noticed as the accompanying phenomenon of *cerebral congestion; acute cerebral inflammation; hydrocephalus; compression of the brain; scirrhous induration of the substance of the brain with softening; ossification of the arteries of the brain, and the hydrencephaloidal disease.*

The *second* has been noticed only in those cases of cerebral disease which are accompanied with effusion and extravasation of fluid in and about the substance of the brain.

The *third*, in aneurism of the basilar artery: and

The *fourth*, which, properly speaking, is only an extraordinary modification of the bellows-sound, is never found accompanying any state of hyperæmia or active inflammation of the brain, and therefore, may be considered strictly pathognomic of a state of *excessive anæmia* of that organ.

We shall now pass to a brief consideration of the locality and the causes of these phenomena.

As it regards the particular sources from whence these different phenomena originate, they are undoubtedly *various*. The ægophonic sound of the voice in these cases, is evidently owing to a different cause, and is differently located from the cephalic bellows-sound; while there can be but little doubt, that the seat of the latter, and that of the "fremissement de cataire," and the cooing or musical sounds, are one and the same. The question then arises, where is the origin or seat of these new auscultic phenomena of the brain?

"From a consideration of the symptoms in the cases cited" by Dr. Fisher, "and the circumstances attending them," he was led to believe that these sounds had their seat and origin "in the arteries." This unquestionably is their true locality, and every circumstance connected with their development goes to confirm this opinion: for it has been shown that these sounds are not only synchronous with the action of the heart, and the pulsations of the arteries, but that they are subject, also, to every little change or variation in their force and frequency, and moreover, that compression of the carotids not only rendered them more feeble and indistinct, but when carried beyond a certain point, entirely obliterated them. It follows, then, even allowing that the arteries are not the *immediate* seat of these phenomena, that the vessels possess *the controlling influence* over their production.

"Assume it as proved, then, that the sound in question proceeded from the arteries, I may farther observe," says the same writer, "that those situated at the base of the brain, were probably the ones in which it originated." "I infer this," continues he, "from a consideration of the peculiar distribution of the arteries within the head. Anatomy teaches us that all the arteries of any considerable size are situated at the base of the brain, and rest on unyielding bony structure. Having passed through their appropriate apertures and osseous canals, they course along upon the base of the skull and in furrows formed for them in the brain, and soon subdivide and spread themselves upon the pia mater, and do not actually enter the substance of the brain until they become mere capillary vessels. There is, therefore, no artery entering the cerebral substance, and no one running over its surface, of sufficient caliber to render it capable of sending forth a bellows-sound, as loud and audible as were those which characterized the above cases. For to produce a bellows-sound in an artery artificially, I find that the artery must be of considerable size, and must rest upon or be in contact with a surface which is solid or somewhat unyielding; otherwise it will not be in a condition required for the development of the sound. Beside the cephalic bellows-sound always accompanied and was synchronous with the pulsatory motions of the cerebral mass; consequently it follows, that the sound must have proceeded from these vessels."—*Am. Journ. Aug.* 1838, p. 298.

Unquestionably the cephalic bellows-sound, in many cases, is owing to

compression of the arteries at the base of the brain; that it is so in all, may admit of doubt. In simple congestion; in the primary stages of inflammation; in actual compression, and in some other conditions of the brain, the arteries, at this point, are undoubtedly the source of the sound; and in all of these cases, so far as my own observations go, the bellows-murmur, comparatively speaking, has been less distinct, fainter, less diffusive, and lacking the coarseness and abruptness which characterize it in some other conditions of this organ. But beside the state of actual compression of the arteries at the base of the skull, which is so much relied on as the immediate cause of this phenomenon, there are other conditions, not dependent upon any state of compression, which are connected with, and are conducive to, the development of this sound. Such, for instance, is the state of ossification of the arteries of the brain; and such, also, is the state of thickening of the internal membrane of these vessels, from inflammation. Indeed, this latter condition is one of the most frequent, as well as natural consequences of a severe inflammatory affection of the brain, and pathological appearances go far to show that the arteries, instead of being *the secondary*, are *the primary seat* of the inflammatory action. Even this state, where the inner surface of the artery is rendered rough or uneven by the swollen and congested points which mark it, is sufficient of itself, to produce a proper bellows-sound. So also is the rough and corrugated condition of the lining membranes of the arteries, when ossified, a sufficient cause for the production of this phenomenon. Indeed, in arteries, as in *all other tubes of an elastic* nature, any resistance to the current of fluid passing through them; any impediment; any thing which can disturb the natural equilibrium of its particles, is the true physical cause of the murmurs produced in them.

Hence, a swollen or contracted state of an artery, by means of inflamed patches along its internal membrane, or a similar, though a more roughened and irregular condition of the volume of these vessels, in a state of ossification, would as readily produce a bellows-sound, as an actual compression of some portion of its caliber.

And again, to produce a bellows-sound "in an artery," it is observed that "it must be *of considerable size*, and *must rest upon, or be in contact* with a surface which is solid and somewhat unyielding; *otherwise it will not be in a condition required for the development of the sound.*"

Here, then, are *two* conditions necessary to the development of a true bellows-sound in an artery. First, the artery must be of "considerable size;" and in the second place, "the artery must rest upon or be in contact with a surface which is solid and somewhat unyielding; otherwise it will not be in a condition required for the development of the sound."

But *how large* an artery must be, or what must be its *exact dimensions* to comport with the idea "of considerable size," is difficult to determine. Surely, arteries of *no inconsiderable size* are to be found diversified over the whole surface of the brain; and yet we are told that there is "no artery

entering the cerebral substance, *and no one running over its surface of sufficient caliber to render it capable of sending forth the bellows-sound.*" And so far, also, as the latter consideration relates to any explanation of the cause of the bellows-sound, by compression, it is an antecedent and necessary condition. Were there no unyielding surface beneath the artery, there could in one sense be no compression; and yet neither of the foregoing conditions are absolutely necessary to the development of a bellows-sound. As has already been observed, the only conditions necessary to the production of this phenomenon is *an inequality or disproportion between the size of the vessel and the quantity of fluid to pass through it*, and by whatever cause this may be produced, whether by inflammation, ossification, compression, rupture or dilatation, or, in whatever condition the artery may be placed, the bellows-sound must necessarily be produced.

So far, then, from *compression* being the sole cause of this sound, or the necessity of the artery being confined to a "solid or unyielding surface" for its development, the very *opposite conditions to these* are found not incompatible with its existence. The cephalic bellows-sound is heard as distinctly, and is as readily produced by *a diminished tension* of the arterial trunks and an existing disproportion between the caliber of the vessels and the quantity of fluid passing through them, as it is by any other concatenation of circumstances; and as the same or similar phenomena are heard in cases of the most perfect anæmia, which is compatible with life, and in arteries, which from their location, are far from being in the requisite position, it follows that the latter consideration is as unnecessary as the former.

The *particular size of the artery*, moreover, is by no means a prerequisite in regard to the actual existence of a bellows-sound. If the necessary conditions are present, a bellows-sound can be, and is produced equally in a very small, or a very large artery; and the only point of difference in the actual manifestation of the *two* sounds is, that in the one it is *perfectly* distinct and audible, while in the other it is perhaps too faint to be cognizable to the senses. Yet it cannot be for a moment questioned, that the phenomenon does actually exist, and that an infinite combination of these very small vessels may assist in making up a bellows-sound, which, if not as distinct as that of a very large one, may, at least, be as readily appreciated.

From these considerations it is evident, that neither compression, nor the position of an artery over a "solid or unyielding surface," nor indeed the size of the arteries, is a necessary condition to the actual development of a bellows-sound; for, as I have already observed, independent of these peculiar conditions, the cephalic bellows-sound, with its numerous modifications, can be produced. Other requisitions than these, are found equally well fitted for the production of such a phenomenon. Such are the contractions or dilatations of the caliber of the arteries; rugosities of its internal membrane;

and any inequalities which may exist between the capacity of the vessels and the amount of fluid to be conveyed through them.

It is true, these all may be considered independent causes; and yet the fact, that a single one of these conditions may be adequate to the production of these phenomena, of itself, is no argument against the presumption, that in like manner each of the others may be a sufficiently adequate cause.

These conditions, separately or combined, I conceive, have existed in each of the cases which have been related, where such cerebral phenomena have been present; and they readily explain the changes and the various modifications which these phenomena undergo, in the numerous instances in which they have been observed.

In the second place, we come to the consideration of the cause of the *encephalic or cerebral ægophony.*

In every instance in which I have noticed this hitherto undescribed cephalic phenomenon, it has been connected, and existed only, with a state of effusion and extravasation of fluid *over the surface of the brain.* I have never been able to detect this change in the character of the voice, *in simple effusion into the ventricles,* nor in any acute or chronic lesion of the brain, except accompanied with effusion and extravasation; consequently, I have been led to consider an extravasation of fluid over the surface of the brain as a prerequisite to the development of this phenomenon. Such a state of the brain, moreover, accords with a similar state, which is known to accompany a similar phenomenon of the lungs. It is owing, therefore, to the natural resonance of the voice being rendered more shrill and brazen by its transmission through a thin layer of fluid in a state of *vibration.* Any other condition of the brain is incompatible with its existence; and wherever this has been present, and the fluid has been subsequently discharged, as in the cases above cited, it has invariably disappeared with the fluid, and never after returned, except with the effusion.

In the third place, for an explanation of the causes which influence the production of the phenomena accompanying aneurism of the basilar artery, I will only observe, they are such as are common to, and are found to exist in, every instance of a similar disease of the arterial membranes; and as such I will only refer the reader to such works as more particularly have reference to the matter in question.

Fourthly, the bruit de poussin, cooing or musical sounds, which are found to accompany certain hydrocephaloid affections, may be considered, simply, as a modification of the bellows-sound, and their causes identical.

I have thus, at considerable length, spoken of certain auscultic symptoms, which are found accompanying cerebral disease. They have hitherto, with the single exception of the cephalic bellows-sound, and an "impulsive sound which I have never been able to discover, passed unnoticed; and even when present, they oftentimes escape the attention of the most careful observer. When once detected, however, they are not easily mistaken

for any other phenomena of the brain. Their appearance is perfectly unique, and corresponds with certain pathological conditions of the organs in which they are developed, and such as have already been described. As signs of disease, they cannot, when once established, fail to be a valuable auxiliary to the other means which are used in the diagnosis of the various difficult and obscure lesions of the brain. At least, if they can serve no better purpose, they will stand out as beacon lights, to warn us of the dangers which are at hand.

ART. II.—*Statistics in Midwifery.* By JOHN GEORGE METCALF, M. D., of Mendon, Mass.

THE study of Midwifery, so far as the impressions of pupilage are remembered, led me to believe that I should more frequently meet with perplexing and dangerous cases in the practice of the obstetric art, than subsequent experience has verified. That alarming and fatal cases do sometimes occur, which put in requisition, to the full extent, the skill as well as the self-possession of the accoucheur, I readily grant; but that the exercise of these qualities is *very frequently* called for cannot be sustained, I am confident, by the testimony of any skilful practitioner.

The late Daniel Thurber, M. D., an eminent and respected physician of this town, in a conversation upon the subject, once told me that the great secret of success in the practice of midwifery very much depended upon *letting the patient alone.* Fresh as I then was from the books and the lecture-room, this was strange doctrine in my ears. What! little or nothing to do in attending a case of midwifery? If this were true, what was to become of all those varied and delicate manipulations by which I was to have the opportunity of exhibiting the great knowledge which I had gleaned from books? And when, if this were the case, and how was I to make an application of the manifold instruments described by Smellie, and Baudelocque, and Denman, and in the use of which I had perfected myself by actual experiment upon a machine made of leather and wood? This was contrary to all my preconceived notions of matters and things in this portion of the field of my future labours; and I take shame to myself that I was not so teachable upon this subject as the great experience and acknowledged skill of the doctor should have rendered me. A few years of practical acquaintance with the subject, however, induced me to yield an unreserved though tardy submission to the excellent precept of Dr. Thurber. And although it may as much astonish those who have just got through with the "*sweating operation*," before the professors or the censors, as it did me, yet, let

me assure my junior brethren, that the proposition is of sound, practical value, and worthy of all acceptation at their hands.

Many unfortunate labours have been made such, I am constrained to believe, by the criminal haste and impatience of the accoucheur. It requires, I am free to confess, no inconsiderable share of mental fortitude, many times, to resist the importunate intreaties of the patient for relief; she will submit to any operation; bear any amount of pain, and assume all the hazard, so that she can be speedily relieved of her troubles. Often, too, I am aware, the time hangs heavy upon us; the hands of the clock, as if in mockery of our anxiety, creep along at a snail's pace; we think of our other patients who have been expecting our visits for the last twenty-four or thirty-six hours; and, although the objurgation, "procul O! procul este profani," is found instinctively upon our lips, yet I dare not deny, that sometimes visions of quiet chambers and refreshing sleep contrasted with uncomfortable quarters and lengthened vigils, may not prompt us to an unseasonable interference with, as they seem to us, the tardy operations of nature. And did this interference always relieve the patient as well as the medical attendant, we should seldom be called to mourn over the disastrous result of our folly and impatience. That the efforts of nature in the act of parturition require assistance at proper times and seasons, and under appropriate circumstances, I have no doubt; but, in rendering this assistance, the comfort and safety of the patient is never to be compromitted for the ease or the convenience of the physician.

The universal medical commonwealth, I am sensible, is somewhat divided in opinion in regard to the utility of the *numerical method of observation*. The great physician of La Pitié has his admirers and his opposers as well on this side of the Atlantic as in Europe. By one party, little if any merit is allowed to the system, and its distinguished author is reprobated as a false teacher in the great school of medicine; while, by the other, the system is regarded as the ne plus ultra of inductive philosophy, and its author as the Magnus Apollo of medical truth. The opposers of the numerical method object to its diffuse generalisations, and insist that its results are not to be taken as safe guides in the performance of our clinical duties. Still, they who object to it as a whole, are willing to acknowledge that the system possesses some merit. While they insist upon the importance of a more minute record of the symptoms of individual cases, they concede that there are many advantages resulting from a general consideration of a number of cases so arranged as that the aggregate results may be seen and appreciated at a single glance.

Although there may be found some seeming strength in the objections urged against the numerical method, when it is applied to the study of *disease*, the strength of those objections will be materially lessened when the method is applied to the study of the different stages of *parturition*. In parturition, which, strictly speaking, is a process of health, comparatively

but few circumstances are to be taken into the account in the prosecution of the study or its phenomena. In disease, on the other hand, beside the multitude of modifying considerations already well known and appreciated, the researches of modern physiology, together with the labours of the dissecting-room, are every day bringing to light new symptoms and new lesions; thus continually widening the field for analysis and induction, and consequently rendering it more difficult to deduce any valuable practical generalizations from the almost innumerable number of elementary data.

Not so with the subject of parturition. It is a long while since the knife, even of the transcendental anatomist, has revealed any thing of particular importance to aid us in the study of obstetrics; and the investigations of the physiologist, excepting, perhaps, on the subject of conception, have been narrowed down to an occasional inquiry concerning the nature and office of the umbilical vesicle, or a passing remark upon the spontaneous disruption of the symphysis pubis. Comparatively speaking, then, the phenomena of parturition are few and well settled; and it is to the study of various relations and combinations of these phenomena that we propose, in the present communications, to bring in aid the method of observation recommended and practised by one of the most indefatigable spirits of the present age.

Before proceeding farther, however, I propose to say a few words upon the medical topography of the ordinary circle of my professional visits. That portion of Mendon (the north part) in which I reside, is situated upon a considerable rise of land, lying between West river in Uxbridge and Mill river in Milford. Its surface, for the most part, is undulating; being broken into ridges and hills, some of which rise to a considerable height, and two of which were occupied as stations in the trigonometrical survey of the state. The hills trend, generally, from N.W. to S.E., and the land falls moderately in the same direction. The soil, for the most part, is heavy and moist, being excellent for grass, hay and orcharding. There are no stagnant swamps, marshes, or ponds in the vicinity, and very little of meadow land is to be found in the whole township. The water is generally soft and very excellent to the taste, though a few wells are found where the water is hard. For the last nine years, during which time I have kept a register, the annual mean of the thermometer has varied from 45° to 39.5°, and the annual range from 99° to 109°. The prevailing winds are from the S.W. or N.W. For the last sixteen years there have been no prevailing diseases in this part of the town, if we except the influenza and some of the minor exanthemata.

Premising that the cases which are the subject of the succeeding remarks, all occurred prior to the year 1839, I now proceed with the analysis of 300 cases of labour and delivery, upon which I attended as the accoucheur.

I. *The* 300 *cases of delivery gave birth to* 302 *children.*

II. *Of the duration of labour.*

The following table gives the duration of labour in hours; thus 1 woman was delivered in 1 hour, and so on:—

Hours in Labour.	No. of Women.	Hours in Labour.	No of Women.	Hours in Labour.	No. of Women.
1	1	17	4	40	2
2	1	18	8	42	1
3	1	19	1	47	1
4	7	20	7	48	1
5	3	21	1	50	1
6	25	22	1	56	3
7	5	23	3	60	3
8	15	24	56	65	1
9	1	25	1	66	1
10	8	27	1	67	1
11	4	28	2	69	1
12	85	29	1	72	1
13	5	30	7	85	1
14	3	32	1	90	1
15	6	33	1		
16	2	36	14		

The two most lengthy labours, those of 85 and 90 hours, were both cases of deformed pelvis, the sacro-pubic diameter being very greatly reduced. In one case, that of 85 hours, the child was expelled by the natural efforts, without the aid of art. The other was delivered by lessening the head and the aid of the blunt hook. As this was the only case of instrumental delivery, it will be seen that the use of instruments occurred only once in 300 cases. Whether this proportion be great or small, compared with the practice in this country, I have no authority for determining. The following table of the proportion of instrumental deliveries, which have occurred in several cities of Europe, is copied from a Practical Treatise on Midwifery, by Robert Collins, M. D., of Dublin, to which, as will be seen, I have added the proportion occurring in my own practice.

Dresden Lying-in Hospital, Dr. Carus,	1	in every	13
Geissen, Lying-in Hospital, Dr. Kitgen,	1	"	9
Berlin, La Charité, Dr. Klugè,	1	"	15
Cologne, Lying-in Hospital, Drs. Minden and Merrem,	1	"	12
Breslau, Midwifery, Prof. Andrée,	1	"	35
Heidelberg, Private Practice, Nægelè,	1	"	28
Magdeberg, Midwifery Institution, Dr. Voigtel,	1	"	5
Breslau, Royal Lying-in Hospital, Dr. Küstner,	1	"	36
Marburg, Lying-in Hospital, Dr. Siebold,	1	"	9
Vienna, Lying-in Hospital, Dr. Boer,	1	"	96
Paris, Maternité, Madame Boivin,	1	"	183
London, Private Practice, Dr. Merriman,	1	"	98
London, Westminster Dispensary, Dr. Bland,	1	"	158
London, do do Dr. A. B. Granville,	1	"	80
Dublin, Wellesley Dispensary, Drs. Cusack and Maunsell,	1	"	34
Dublin, New Lying-in Hospital, Dr. Beatty,	1	"	99
Dublin, Lying-in Hospital, Dr. Joseph Clarke,	1	"	162
Dublin, " " Dr. Collins,	1	"	114
Mendon, Private Practice, Dr. John George Metcalf,	1	"	300

III. *Presentation.*

The following table comprises all the different presentations; thus in 286 children the vertex presented, and so on:—

Presentation.	No. of Children.	Presentation.	No. of Children.
Vertex,	286	Breech,	3
Face,	1	Funis,	2
Face to pubis,	1	Placenta,	1
Both feet,	3	Not known,	4
Foot and knee,	1		

By the foregoing table, it will be seen that the natural presentations, allowing the four cases not known to have been preternatural, were 94.7 per cent. of the whole number, leaving only 5.3 per cent. for all presentations other than the vertex.

The *face presentation* occurred in a rapid labour, and gave no trouble in the delivery. There was nothing in the case worthy of note, save that I was sorely puzzled for a while to make out the presentation. The child's face was very livid, and did not assume its natural colour for some days.

The *face to the pubis presentation* occurred in a long and tedious labour. It was the first case to which I was called, after I came to this town, and was a miscarriage in the eighth month of utero-gestation, occasioned by the brutality of a drunken husband; complicated as it was with a prolapsus of the funis, and stranger as I was to the practice of midwifery, as well as to the people among whom I had located myself; this case, as may well be supposed, gave me no inconsiderable uneasiness. It, however, terminated well; the child, from the prolapsus of and pressure upon the umbilical cord, was lost, but the mother had a speedy recovery.

Of the *three presentations with both feet*, two were lost after the descent of the child as far as the head. In the first case I was not called until after a midwife had exhausted her skill if not her strength upon the delivery, and the child was found quite dead upon my arrival. The delivery was completed without any difficulty, and the patient soon recovered. The other occurred in the early part of my practice, and with a fair trial, except the absence of the uterine contractions, I did not succeed in accomplishing the labour until the child was dead. Perhaps, but for certain vague fears of a dislocated neck, or having a child born minus a head, I might have accomplished the delivery in season to have preserved the child. As it was, however, I was too late, and I could plainly distinguish those convulsive motions, described by authors, as preceding the death of the fœtus. The remaining case was delivered with but little aid, after a labour of twenty-four hours.

The case where *one foot and one knee presented*, being soon converted into a footling presentation, was got along with as far as the head, without difficulty. Here it was arrested, and for a while, resisted my utmost endeavours; but, with the fingers depressing the chin and the exercise of no in-

considerable degree of force, delivery was accomplished in season to preserve the life of the child.

The *breech presentations*, of which there were three, all did well. One of them was attended with the longest uterine contraction I ever witnessed. At its commencement, I was sitting below stairs in conversation with the husband, from whom I was summoned by one of the attendants. On entering the room, I found the patient in strong pain; and, on making an examination, I ascertained that the breech presented, and was rapidly passing through the superior strait of the pelvis. The uterine effort continued without the least intermission, until the delivery was wholly completed. Twenty-five minutes before this I was unable to make out the presentation. It was a fourth labour, and the whole process was accomplished in three hours. From its completion at 8 P. M., until 4 of the clock the next morning, the patient continued very faint; the syncope, at times, being quite alarming. There was a copious hemorrhage for the first hour or two, but I attributed the faintness more to the rapidity of the labour, and the suddenness of the delivery than to that circumstance, the patient being of a very full and plethoric habit. In all three of the cases no trouble was met with at the delivery of the head; with a finger in the mouth, and the chin depressed upon the breast, very little force was requisite to finish the labour.

In both cases where the *funis presented*, the child was dead some time before birth. One occurred in a case to which I was not called until some hours after the pulsation in the cord had ceased. The presentation was natural, the delivery was readily accomplished, and the child, which was a male, was found to be a very large one, weighing 11¼ pounds. It was the fourteenth child. The other case has already been referred to as the face to the pubis presentation, and was a miscarriage in the eighth month. The cord was found prolapsed at the first examination, and I was unable to reduce it behind the presenting part after repeated trials. Dr. Smellie says, "when the cuticle is detached, or nearly so, from the body of a new-born infant it is evidence that the child has been, *for some days*, dead." In this instance the umbilical arteries pulsated strongly for many hours after I was called, and continued to do so until within twelve hours of the birth of the child. The life of the child was also proved by the strong and sensible motions which could be plainly felt through the abdominal parietes; yet, when born, the cuticle was off in many places about the body, and one arm was almost entirely denuded.

The case of *presentation of the placenta* occurred in an abortion at five months. On coming at the residence of the patient, which was five miles distant, I was told that she had been flooding for some time and had become very faint. The attendants were very much alarmed and urged an immediate examination. On complying with their solicitations I found the vagina filled up with what I supposed to be a coagulum; but, a pain occurring at the moment, it was expelled and was found to be the placenta, completely

separated from the fœtus by the rupture of the umbilical cord. A succeeding examination brought on another uterine contraction, and the fœtus was soon afterwards expelled. Pressure upon the abdomen, together with the administration of diffusible stimuli and large doses of acetate of lead and opium, arrested the hæmorrhage. The patient continued extremely feeble for some days, and ultimately recovered after a tedious and protracted convalescence. This was the fourth time that abortion had occurred to the patient, having, in no one of her former pregnancies, arrived at the sixth month. She has since been delivered of a healthy child at the full time.

The cases of *presentation not ascertained*, were those to which I was not called in season, and of which the attendants could give no intelligible account on my arrival. Without being able to ascertain for a certainty, yet from the ease and rapidity of the labours, it is quite probable that these four cases should be classed with the presentations of the vertex. Supposing this to have been the case, we should have had then 290 presentations of the vertex out of 302 births, leaving but 12 preternatural presentations to make up the balance.

IV. *Sex.*

	Males.	Females.
No. of Children.	165.	137.

The table, as may be seen by inspection, gives 55 per cent. for males, and only 45 per cent. for females. Did this proportion hold good through the commonwealth it would give 403,047 males, and only 334,651 females, making a difference, in favour of the males, of 68,396.

But this ratio does not at all tally with the proportion between the two sexes as set down in the Sixth Census of the United States, taken in 1840. I there find the number of females set down at 372,366, and the males at 365,333, thus giving 7,033 more females than males.

By a comparison, however, of the census of 1830 with that of 1840, I find that the disproportion of females has been considerably lessened for the last ten years. The census of 1830 gives 13,989 more females than males, while that of 1840 brings down the excess of females to 7,033; thus making a difference in favour of the males of 6,956 between the two periods of the enumeration. Whether this difference is to be accounted for by an actual gain in the number of males born, or whether our young men have, at last, found out that their own New England (taunted though she may be, by our brethren of the sunny South, with exporting nothing but ice and granite) is to be preferred to the pine barrens of Carolina, or the lithographic cities of the West, are questions which yet remain to be settled.

V. *Hours of Delivery.*

Hours of Delivery.	No. of Children.	Hours of Delivery.	No. of Children.	Hours of Delivery.	No. of Children.
12 N.	2	8 A. M.	10	4 P. M.	22
1 A. M.	19	9 A. M.	7	5 P. M.	14
2 A. M.	17	10 A. M.	15	6 P. M.	15
3 A. M.	18	11 A. M.	12	7 P. M.	9
4 A. M.	10	12 M.	16	8 P. M.	12
5 A. M.	19	1 P. M.	6	9 P. M.	10
6 A. M.	12	2 P. M.	13	10 P. M.	15
7 A. M.	10	3 P. M.	7	11 P. M.	12

For the better understanding of the table I will say that it is to be read thus; 2 children were born at midnight; 19 at 1 A. M., and so on. It is not intended to be understood that the children were born exactly at the hour under which they are set down, but that they were born nearer to it than any other.

It is a popular notion, for what reason I know not, that many more children are born in the night than in the day time. An examination of the foregoing table, so far as the number of cases under examination may be allowed to prove the falsity of the supposition, will point to a different conclusion. It will be seen that 151 labours were completed between 12 o'clock at night and 12 o'clock at mid-day, being just one half of the whole number of children born; consequently just as many (151) children were born between mid-day and mid-night. It will be further seen that from 6 o'clock P. M. to 6 o'clock A. M. 155 children were born, and from 6 o'clock A. M. to 6 o'clock P. M. 147 children were born; thus distributing the births pretty equally between the forenoon and the afternoon as well as between the day and the night.

VI. *Number of Pregnancies.*

No of Pregnancies.	No of Women	No of Pregnancies.	No of Women
1	72	7	9
2	54	8	5
3	52	9	0
4	40	10	2
5	38	14	2
6	26	0	0

Thus, with 72 women, it was the first pregnancy, and so on. The terms, "number of pregnancies," used in this connection, are intended to comprise abortions and miscarriages as well as when the child was carried to the full time. It is probable that this table may not be strictly correct, as in the early part of my practice I was not so particular in my inquiries touching the subject of abortions; and besides, the desire, so generally evinced, to keep such accidents secret, may have sometimes stood in the way to a true and correct answer when the interrogatory was not forgotten.

The want of the age of the mother, I am aware, will render the foregoing table of, comparatively, little practical value. That deficiency, in my note book, I have supplied since the year 1839, when these tables were arranged;

and, should I find leisure or inclination, at some future day, to make further report of the obstetrical cases which have fallen under my observation, the present desideratum will be found in its proper place. As a matter of curiosity it may be noted that the whole number of women (300) had given birth to 993 children; that the *first* pregnancies occurred as often as *once* in every 13 cases; the *second* in every 18; the *third* in every 19; the *fourth* in every 25; the *fifth* in every 26; the *sixth* in every 38; the *seventh* in every 110; the *eighth* in every 198; and the *tenth* and *fourteenth*, each, once in every 496 cases.

VII. *Weight of Children.*

Weight	No. of Children.	No. Males.	No. Females.
2 lbs.	3	2	1
3	1	1	0
3½	1	0	1
4	1	1	0
4¼	1	0	1
4½	1	1	0
5½	5	2	3
6	2	1	1
6¼	1	0	1
6½	11	4	7
6¾	8	5	3
7	30	13	17
7¼	15	4	11
7½	28	14	14
7¾	9	3	6
8	40	17	23
8¼	11	6	5
8½	28	16	12
8¾	12	6	6
9	28	20	8
9¼	12	8	4
9½	17	15	2
9¾	6	3	3
10	15	10	5
10¼	2	1	1
10½	5	5	0
10¾	4	2	2
11	3	3	0
11½	2	2	0

The foregoing table is to be read thus; three children weighing two pounds each, of whom two were males and one a female, and so on. The children which weighed two, three and three and a half pounds, were abortions, at what months I am not able to state. The child weighing four pounds, I was told by the mother, was the largest of all her children at birth, she being then the mother of six. Although all small at birth and rather below the ordinary size at puberty, yet this family, without exception, by the time they arrive at adult age, exceed in stature most of their neighbours. The mother is below the medium standard, while the father is tall, muscular and robust. The two children, one a female and the other a male, weighing respectively four and a quarter and four and a half pounds, were born at the

full period, of healthy mothers, and both did well, although puny and feeble for the first few weeks.

The mean weight of the whole number of children is eight pounds two ounces; of the males eight pounds six ounces; and of the females seven pounds twelve ounces.

VIII. *Deliveries in the different months.*

Months	No. Deliveries.	Months	No. Deliveries
January	24	July	27
February	27	August	22
March	33	Sept.	31
April	17	Oct.	22
May	27	Nov.	27
June	21	Dec.	22

By comparison of the seasons it will be perceived that the births were distributed quite equally between the four; spring furnishing 77; summer 70; autumn 80, and winter 73. Of the individual months, March furnished the greatest number, being 33; while the succeeding month, April, furnished the least number, being only 17. Whether the universal custom of changing the yearly residence in the month of April has any connection with the paucity of births in that month, is a question, the decision of which I must abandon to gentlemen deeper in the mysteries of political economy than myself.

IX. *Circumstances not classified.*

Births completed without rupture of the membranes	2
Still-born	7
Abortions	5
Miscarriage	1
Twin cases	2
Children deformed	2
Pelves deformed	2
Spina bifida	1
Illegitimate	3
Puerperal Fever	2
Mortification	1
Convulsions	2
Retained placenta	1
Perineum ruptured during labour	1
Ergot given before the birth of the child	2
Ergot given after the birth of the child	3
Venesection during labour	2

There were *two* cases where the membranes were not ruptured until after the delivery of the child. In both cases the membranes were unusually strong; in one very remarkably so. In one case the delivery was accomplished eight or ten minutes before my arrival; but in both the membranes were ruptured and the children saved.

The late Dr. Thurber (the same gentleman to whom I have never before referred in this communication) once related to me a case of this kind, which,

from its infrequent occurrence, and as a curiosity in obstetric practice, is here inserted. I shall use the Doctor's own language in the narration. "I was called," said he, "in haste, to visit a woman at the alms-house in Bellingham, said to have been taken in labour while on the road, and who had been removed to the house by the overseers. On my arrival I was told that the patient had been delivered by the natural pains, but had given birth to a false conception or a monster, and which I was desired to determine. The attendant who was holding the product of delivery, folded in a sheet, declared it must be a monster, for she had felt strong motions in the mass, she was certain, for some minutes after the delivery; and besides all this, to make the matter of the monster more sure, the lady who had officiated as the sage femme averred that there was no navel-string to be found. On examination, judge of my surprise when I found, in the lap of the woman, the whole ovum, placenta and all; with the membranes still entire and the child floating in the liquor amnii. Had I been certain the child was past recovery I should have preserved the whole as an anatomical specimen; having doubts, however, I immediately ruptured the membranes and released the child from its prison house; but notwithstanding long-continued and persevering efforts for that purpose the little one could not be resuscitated."

Of the *seven still-born children* (not including the abortions) four were natural presentations and had been, apparently, some time dead. One was with the face to the pubis and two were footlings. Nothing worthy of record took place during their delivery.

Of the *five cases of abortion*, two were illegitimate. In one of the cases the placenta, after a dangerous hæmorrhage, was delivered before the fœtus; and in all, the flooding was more severe than in ordinary cases at the full time. The case where the placenta presented has already been commented on, and some further notice of the cases of illegitimacy will be found in another place before the close of the present communication.

The *single case of miscarriage*, occurred in the eighth month of gestation. It was a case where there was a prolapsus of the funis, with the face to the pubis, and has been already referred to under the head of presentations. By *miscarriage* I understand the occurrence of labour *after the sixth* and *before the close of the ninth month;* while the occurrence of labour at any time previous to the *close* of the *sixth* month is termed an abortion.

Of the *twin cases there were but two*, thus furnishing but *one* case to every 150 labours. This proportion is much smaller than obtains in the countries of Europe. From authentic records we learn that in France, the proportion of twins is *one* in every 95 births; in Germany, *one* in 80; in England *one* in 92; in Scotland *one* in 95; and in Ireland *one* in 62.

Of the cases under present consideration the first was a short labour, and the second child was born within five minutes of the first. The first child was a natural presentation; the second, presented footling; they were both

females. In the second case the children were born, the second after an interval of six hours from the first. The first was born within thirty minutes from the time when the mother woke from a sound sleep, and before even the nearest neighbour, who lived only across the road, could get up (it being night) and dress herself. The patient not dreaming that she was to be delivered of another child, for the present, at least, began to congratulate herself that she should do very well and cheat the Doctor out of his fee beside. It was not long, however, before she began to be afflicted with severe after-pains, and which continuing to increase in severity, and the after-birth not coming away in a reasonable time, induced her and her friends to believe that something or other was not *quite* right, and that it was best to send for the physician after all. I was accordingly summoned to attend, and, on my arrival, found the patient in strong and convulsive throes. I immediately sat down, and making an examination, found the vertex of another child presenting. A few pains accomplished the delivery. The children were, one a male the other a female, and, with the mother, did well. Of the first pair one died in a few weeks of hooping-cough, which was then prevalent in the neighbourhood. In both these cases there were two placentas, and, in both, they were not delivered until after the expulsion of the second child.

Two cases of deformity only occurred in the whole number under consideration: being in the proportion of *one* to every 150. In the first case the deformity consisted in the addition of two fingers and two toes, one to each hand and each foot. These were afterwards amputated and the subject reduced to the usual complement of members. The second case was one which very much excited my curiosity, at the time, from the fact that the exact species of deformity was foretold by the mother, before her accouchement. She declared that the child's hands would be articulated to the arm at the elbow, the fore-arm being absent, and that the fingers would be found pointing to the shoulder. She gave as a reason for this that, during her pregnancy, a little brother who had died of dysentery, kept his hands in continual motion about his mouth, for a day or two before his death, having the fore-arm constantly bent upon the humerus. The event of the birth verified her prediction to the letter. In this case also the funis could not have been more than eight inches in length, as it was with great difficulty I could apply the ligatures.

I have witnessed only *two cases of deformed pelves.* They both consisted in the undue shortness of the sacro-pubic diameter. In one case the child was born alive, by the natural efforts, after a tedious labour of 85 hours. It had convulsions for two or three days, after delivery, but finally recovered. In the other, after a labour of 90 hours, delivery was effected by lessening the head and the use of the blunt hook. This patient had a very rapid recovery. It was a natural presentation, and within the first twenty hours the head was firmly locked in the bony strait and the vertex was presenting at the os externum. Notwithstanding the pains were strong and regular for

many hours after this, yet no progress was made in the delivery. After the uterine efforts began to give way the ergot was repeatedly tried, but with no perceptible advantage. The strength and spirits of the mother were admirably sustained. Finding no progress was being made, I now proposed the calling in of counsel. Dr. Bucklin of Hopkington, an experienced and skilful physician, was called. After an examination of the case and a due consideration of the circumstances attending it, it was concluded to make further trial of the ergot. It was accordingly administered, and soon displayed its specific effect; producing severe and long-continued convulsive throes, but all to no avail. The child could not be made to advance though the dose was again repeated. Through all this time, (and the labour had now lasted almost 90 hours,) the patient held out remarkably well. For the last 24 hours she had got some considerable sleep, there was only occasional nausea; no arterial excitement was present; there was no abdominal tenderness, and the external organs of generation, although somewhat swollen, were free from heat or soreness. The mother had felt no motion of the child for the last 36 hours, and, despairing of seeing the labour accomplished by the uterine efforts, we now decided upon an attempt at artificial delivery. The forceps were first used, and although they could be well applied, yet the child could not be moved. A trial with the lever succeeded no better. The head was now opened with the scissors, the brain evacuated, and, with the hook fixed in the margin of the foramen magnum, the delivery was speedily accomplished.

Of the 300 cases there was but *one of spina bifida.* The child survived but a short time, and no liberty for a post-mortem examination could be procured. There was a tumour, of the size of half an orange, upon the dorsal vertebræ, and which evidently communicated with the canal of the spinal column. The forehead was low and retreating, and the expression of the face was decidedly fatuous. The birth was declared, by the mother, to have been premature, though the size and appearance of the child did not seem to support her opinion.

Two of the *three illegitimate children* were abortions. The one born at full time was without the ordinary circle of my professional rides. I was sent for, as I afterwards learned, because, being a stranger to the parties concerned, it was thought the lady would be relieved from the disagreeable necessity of listening to certain impertinent questions usually put on such occasions, touching the paternity of the child, &c. Of the abortions, the mother of one of the children was far gone with pulmonary consumption; and, as she told me, had drunk freely of tansy tea for some days before the occurrence of labour. Her paramour, as she averred, had also offered to procure some "'pothecary medicine" to expedite the process, if she would take it, but this she declined. In the other case of abortion nothing worthy of note took place during the delivery or afterwards.

Of the *two cases of puerperal fever* only one was at all severe. In

this, the febrile incursion made its appearance on the third day, and was attended by the usual symptoms of that dangerous disease; rigors, long continued; head-ache; acceleration of the pulse; diminished secretion of milk; abdominal tenderness; cessation of the lochial discharge, &c. A vigorous, antiphlogistic treatment and regimen was pursued, and the patient ultimately recovered. She was bled twice and freely, and repeatedly purged with jalap and calomel, and salts and senna. The child was transferred to the bottle; but, at the end of three months, the lacteal secretion returned, the breasts became full and distended, and the child soon deserted the artificial nipple of her bottle for the more natural one of the mother. The other case was slight; a single bleeding, with a dose or two of sulphate of magnesia, completed the cure in a few days.

The *case of mortification* occurred in a young woman, four weeks after confinement with her second child. For the first week succeeding her accouchement no untoward symptom was developed, and all things seemed to promise a speedy recovery. Soon after this, however, she began to fall off and a mild degree of irritative fever supervened. The tongue became red and sore; she had continued headache; bowels close at first, though they soon became and continued loose until the close; skin, after the second or third day, constantly moist and clammy; no appetite; great and constant irritability of the whole muscular system, and very great dejection of the mental powers. Although aided by experienced and competent counsel, no impression was made upon the disease; all our curative efforts were of no avail, and the patient rapidly sunk. During the third week from her confinement, mortification made its appearance upon the calf of the left leg. When first discovered the lividity was about the size of a half dime. This continued to increase, assuming an oval shape, until her death, when it was nearly the size of the palm of the hand. For the last two or three days the patient was affected, for the most of the time, with a low, muttering delirium.

There were *two cases of epileptic convulsions;* one very severe and one slight. The slight case recovered after a single small bleeding and a draught of valerian. In the other the epileptic incursion took place a short time before the birth of the child, and the delivery was accomplished during a convulsion. The placenta was soon brought away and the patient removed to another bed. From this time, the convulsions continued rapidly to increase in frequency and strength for the first forty-eight hours; after which there was a gradual abatement. From the very first attack there was an entire loss of consciousness for the first *four days;* and during a considerable portion of this time, it was with great difficulty the patient could be kept upon the bed by two or three attendants. The treatment consisted in active depletion, accomplished by the lancet, purgatives and enemas. My notes of this case, which were very full and complete, have been mislaid or lost, or I would give the symptoms and treatment more in detail. The before-men-

tioned remedies, together with the adoption of the antiphlogistic regimen, however, constituted the basis of the medical prescription, and under which the patient recovered.

It was not until the morning of the fifth day from her accouchement that the patient showed the least sign of returning consciousness; and never shall I forget the smile of recognition which lighted up a countenance, once more beaming with intelligence, as I paid my morning visit to her bedside. I found she had no recollection of a single occurrence from the first attack until the present morning. The last thing she remembered was an intense and rending pain in the head; which, without doubt, took place just before the epileptic attack. During all this time she did not speak a single word or make a solitary, intelligent sign. On asking her now if she knew that she had become a mother, she answered me, with a smile, "I suppose I have, for I have just heard the cry of an infant in the other room; but I remember nothing since last night, when you was sitting by the side of the bed."

This patient, I afterwards learned, had been attacked with slight fits of epilepsy or hysteria during her pregnancy, but the exact nature of which I was unable to learn, she living at the time, in a distant part of the country. Her recovery was rather slow, but finally became firm and permanent.

The *case of a retained placenta* occurred in a fourteenth labour, and had happened to the patient in two or three prior deliveries. At the present time an alarming hæmorrhage soon came on, after the birth of the child, and the patient presently became faint. Finding the pains trifling, the hæmorrhage continuing, and the means used to prevent it unavailing, I carefully, and without much trouble, introduced the hand into the uterus; and, grasping the partially detached placenta, which I found at the fundus, it was soon safely delivered, the womb contracting slowly as the hand was withdrawn. Nausea and vomiting, attended with severe after-pains, soon followed and continued, with occasional intermissions, for five or six hours. The patient, however, was soon convalescent, and recovered her strength in the usual time.

The *case of rupture of the perineum*, took place in a fifth labour, and with a child of moderate size. The patient lay upon her back upon the middle of the bed, with the knees drawn up and close together. Just as the head was passing the os externum, during a violent pain, she threw her feet suddenly and violently down, and thus, crowding the head backward upon the perineum, it was ruptured. The rupture extended as far as the anus, but the sphincter was uninjured. It gave her some trouble for a few days, but after that I heard no more of it. I have met with one other rupture of the perineum, which occurred in a previous labour and under the management of another physician. The sphincter ani was completely divided and the rupture extended an inch up the rectum. On inquiry, I found she had never been able to command the fecal discharge, when any looseness of the bowels prevails, since the time of the injury.

With regard to the *use of ergot*, I have given it but *twice before the birth of the child.* In both the head was pressing upon the external organs; the parts were well dilated, and the uterine pains were nearly if not quite absent. One of the cases was complicated with a deformed pelvis, and the ergot was repeated more than once before the trial was abandoned. In both the specific effects of the medicine was soon produced, and in one the labour was soon completed. In the other the most violent contractions failed to accomplish the delivery, and, after ineffectual attempts to bring the child with the lever and forceps, craniotomy was resorted to.

I was once in attendance upon a long and tedious case of midwifery, when the uterine contractions were, at last, almost wholly suspended. The period of the labour, the low descent of the head, together with the dilatability of the external organs, made it a case where the use of the ergot was fully justified. The proposal was made to the patient, that a trial should be made with it; but she obstinately refused, alleging, that she had suffered from its administration in a former labour. But after waiting for another hour, and no return of the pains appearing, she very reluctantly consented to submit to its exhibition. On examining my medicine, however, I found I had none with me; and, as I was some way from home, I concluded to let a strong dose of black tea, seasoned with a little tincture of cinnamon, pass with my patient, for the so much dreaded decoction of ergot; trusting to the effect upon the imagination, for the hoped for result. The potion was administered with due gravity of face, and taking out my watch, I predicted that the pains would be produced in the course of twenty-five or thirty minutes at farthest. The attendants were directed to get in readiness for the reception of the new comer; while I sat down very deliberately, making what display I could with the ligatures and scissors, to await the operation of the prescription. True to the prediction, after the lapse of a little more than twenty minutes, the hitherto suspended, or scarcely perceptible contractions of the uterus began to increase, and, in the course of fifteen minutes more, were strong as I could wish. A few striving pains finished the delivery.

Now, whether these pains were the consequence of the recollection, by the patient, of the trial of the ergot in a previous labour, assisted by the mental associations connected with its operation; or whether their occurrence was simply a fortuitous coincidence, are questions I will not pretend to decide. I will only say, that I was relieved soon after the dose of tea and cinnamon was taken, from a state of much anxiety and suspense; glad to see the case favourably terminated for any reason.

The ergot given in three cases after the birth of the child, was for uterine hæmorrhage; and in all three, the hæmorrhage was soon measurably checked. I, however, more generally use the liquor cupri sulphatis of the American Pharmacopœia, or the acetate of lead and opium.

Venesection was practised during labour in only two cases, and in both, with the happiest results. In both cases the os uteri, as well as the external

organs, were rigid and unyielding, although the pains were strong and frequently recurrent. Both subjects were full and plethoric habits, and robust constitutions; and in both, the venesection was carried to the extent of decidedly affecting the system. Dilatation of the mouth of the womb soon followed, and delivery was speedily accomplished.

Having now concluded the recital of such observations, of a practical nature, as have occurred to me in recapitulating the preceding tabular statements, I propose to trespass no farther upon the indulgence of the reader at this time, than to close this paper with a few general remarks upon the *practice* of midwifery.

In the practice of this branch of our profession, the physician is sometimes placed in situations peculiarly adapted, not only to try his patience, bnt to call for the prompt and fearless exercise of some of the most important of his professional duties;—duties, the merits or demerits of which, are only judged of by the success or failure which follows their discharge; without the remotest reference to the propriety of their adoption, or the skill with which they have been performed. Like the political rebel, the doctor is deified or damned, solely by the triumphant or disastrous issue of the case. No matter if he has displayed the most consummate skill; no matter if his duty has been performed at the most opportune moment; no matter, if from the beginning, he has given an unfavourable prognosis; if he fails to accomplish what is, at present, beyond the reach of art, he is at once condemned, without benefit of clergy. And if the desired period ever arrives, it will only be after years of unheeded and unrequited toil, that he can retrieve his character as an accoucheur.

But, notwithstanding the manifold hazards of professional shipwreck, we should discharge our duties faithfully and fearlessly; disregarding alike every selfish suggestion, and every slavish fear which would lead us to hesitate or doubt. Situations will sometimes occur in the practice of midwifery, where, from the urgency of the symptoms, we are precluded from the aid of counsel, or even a reference to the library; and here the physician must depend entirely upon himself. Here he will learn how necessary it is to acquire that decision of character and concentration of thought, which, in the hour of danger, will secure him an honourable retreat, if not a glorious victory.

Never be deterred from doing whatever you believe important for the relief of the patient, by the fears, or indecision, or clamour of the attendants. Take counsel of your own judgment, and bide the issue. Having made up your mind that the efforts of nature are incompetent to the performance of the task, and that your interference has become necessary, never go to work with hesitation or precipitancy. Be calm, cool, and deliberate in every step of your operations. Never betray, by any ambiguous expressions, doubts of the necessity or the propriety of whatever you propose to do. Be careful also, that the eye or the hand does not contradict the professions of the

tongue. Make no unnecessary display of your tools, if you must use them, either to impress the patient with the importance of the operation, or raise the wonder of the attendants. In difficult cases, if the urgency of the symptoms does not prevent, avail yourself of the benefit of counsel, and never be obstinate if the patient or her friends anticipate you in its recommendation. I am satisfied that your acquiescence in her suggestions, on this point, will beget in your patient a stronger confidence than your opposition to them.

Do not interfere with the operation of the natural machinery of parturition; so long as there is a reasonable prospect, it will accomplish the process without your help. A physician of much experience in the obstetric art, once remarked, in my presence, that he believed many children were lost in those cases where ergot was given to expedite the labour. If this be the case, we should then be wary of its employment. We should never use it barely because we have a lengthy labour, and desire to have it completed. We should wait, unless the condition of the mother demands its administration; or the head is so low that we are *sure* a few pains will finish the delivery.

Physicians are sometimes applied to for the procurement of abortions, but such solicitations should always be resisted; unless, indeed, the condition of the mother should justify our interference. Such instances, however, are very infrequent, and should only be determined on after consultation.

Finally, be not discouraged that business and confidence come slow. Deserve them, and you will be sure, sooner or later, to find your reward. Study to be affable and condescending to all; remembering that it is your duty to sympathize, in an especial manner, with the sick and afflicted, as well as to cure their diseases. Despair not when you see the pedlar of some wonderful specific, carrying the town in which you live by storm. Envy not the arrogant quack, who, by the help of some contemptible trick of professional legerdemain, often builds up a character in a single night, for the reason, that nature has accomplished her purposes in spite of his blunders. Remember "the race is not always to the swift, nor the battle to the strong," and be comforted.

MENDON, *April*, 1843.

ART. III.—*Clinical Report of Cases, treated in the Medical Wards of the Pennsylvania Hospital, during the months of March, April, May, and June*, 1843. By WILLIAM PEPPER, M. D., one of the Physicians to the Hospital.

DURING the term embraced in this report, several cases of pleurisy, pneumonia, bronchitis, intermittent and typhoid fever, were admitted into the

hospital; but, as is usual during the spring months, the diseases were chiefly of a chronic character—including numerous cases of phthisis, organic diseases of the heart, visceral enlargements following protracted intermittent, and various affections of the liver and kidneys. The following cases are selected, as presenting some points of interest.

Case I.—*Typhoid fever—difficulty of diagnosis—morbid appearances.*—Leonora H., aged 37, single, mantuamaker, entered the hospital May 7th, 1843. One week ago she had a chill, followed by severe headache and fever; and for several days after the commencement of the attack, she had three or four liquid stools per day, but the stomach has been retentive throughout. It was also stated, that the patient had been at times slightly delirious and indisposed to answer questions. On entering, the pulse was 95, and feeble; tongue white; skin hot and dry; she complained of headache, and had considerable thirst, but no appetite. About twelve rose-coloured spots were observed on the abdomen; they were slightly elevated, of an oval form, and disappeared under pressure. Towards evening she became delirious, and disposed to quit her bed; during the day she took pil. hydrarg. gr. vi., which in two hours were followed by four copious liquid stools. Diet restricted to barley water or thin gruel;—mist. neutral. occasionally during the night.

8*th*. This morning she is perfectly free from delirium, and answers questions with great promptness and precision; face slightly flushed; eyes sunken, but not injected; no complaint of headache; eruption faded. Towards evening her pulse rose from 100 to 110, the heat of surface was also slightly increased, and the delirium returned. During the day she had two involuntary discharges of thin yellow fæces. Injection containing a few drops of laudanum, liquor acetat. ammoniæ ℥ss. every three hours, to be substituted for mist. neutral.

9*th*. Her memory is feeble and confused, and she obstinately refuses to take medicine or nourishment; pulse 100, and more feeble; conjunctiva slightly injected; no return of diarrhœa. A few sudamina were now observed on the neck and abdomen, but the rose-coloured eruption had entirely disappeared. She passed a tranquil night, and the following day was less delirious, but in other respects there was no important change in the symptoms. Sulph. quiniæ, gr. j. every other hour during the day, with an occasional tablespoonful of wine whey; liquor acetat. ammoniæ, to be continued during the evening exacerbation.

11*th*. Respiration perfectly natural, and no rhonchus to be detected in any part of the chest. The skin was now moist; and some subsultus tendinum, and tremor of the hands were observed for the first time; bowels constipated; tongue and pulse as at last report. In the evening her delirium became of a more violent character; she occasionally struck at the attendants, and had to be restrained in her bed. Blister to back of neck; mucilaginous enema; pulv. ipecac. et opii, grs. v. at bedtime.

12*th*. Capillary circulation more languid, with greater injection of the conjunctiva; she refuses to answer all questions, but the delirium is decidedly more tranquil than last evening. The tongue still continues white and moist, nor has there been any return of the diarrhœa; pulse 105. Pupils natural; some subsultus, and temporary rigidity of upper extremities. About ℥iv. of blood were drawn by cups from the temples, and from behind

the ears. The feebleness of pulse, and general prostration required that the quinia and wine whey should be continued as before directed.

The patient continued in nearly the same condition up to the 14th. Pulse 120, small, compressible, bis feriens; tongue slightly dry; subsultus diminished. She is less delirious, and perfectly tranquil; and, notwithstanding her alarming condition, expresses herself as feeling much better, or even perfectly well, and free from all suffering; urine sufficiently copious, and voided with facility; one liquid stool during the day. Same treatment continued.

15*th*. Last evening she became more prostrate; the pulse was irregular, and the face and extremities cold. In the morning, the tongue was brown and dry; pulse 135, and extremely feeble; the delirium had not increased, nor was there any return of the abdominal symptoms. Carb. ammonia, milk punch, beef tea, &c., were administered from time to time; but the patient continued to sink, and expired on the evening of the 17th, without having had convulsions or comatose symptoms.

Autopsy the following day.—At the lower part of the ileum, adjoining the valve and opposite the insertion of the mesentery, was a superficial ulcer about an inch in diameter, and extending down to the subjacent cellular tissue, which was slightly thickened and indurated. Several of Peyer's glands in the lower part of the small intestine were injected and tumid; about six inches above the ileo-cœcal valve was an ulcer four lines long, and two wide, with perpendicular edges, and excavated down to the peritoneum; and two feet above the valve, opposite the insertion of the mesentery, was another ulcer precisely similar to the one last described; corresponding mesenteric glands greatly enlarged, softened, and engorged. Liver slightly congested; gall-bladder filled with small gallstones, composed chiefly of cholesterine, whole number 123, weight of largest, 21½ grs.; spleen soft, but not enlarged; other abdominal viscera healthy. Heart and lungs natural.

Brain. The arachnoid membrane at the summit of the hemispheres, particularly in the course of the large vessels, was slightly opaque, but not thickened; and about two ounces of limpid serum were contained under that membrane. Pia mater not injected, nor adherent to the cortical substance. Brain pale, and of good consistence—no effusion into the ventricles.

The diagnosis in the above case was attended with some difficulty. The patient had neither stupor nor dulness of hearing; at no time during her illness was there epistaxis, or complaint of abdominal pain; moreover, the age of the patient, and the fact of her having resided in the city for a number of years—all tended to render the existence of typhoid fever improbable. In fact, nothing but the slight diarrhœa, and rose-coloured eruption, led to a suspicion of that disease; and even these symptoms were not sufficiently marked or permanent to remove all doubts. That such, however, was the case, is confirmed by the appearance of the intestinal and mesenteric glands. It has been observed, that those cases of typhoid fever which are comparatively latent, are most liable to terminate in perforation of the intestine; and such, most probably, would have been the result in the above case, had the patient survived several days longer.

It is not improbable that the slight opacity and sub-arachnoid effusion, were the result of inflammation, which must in some degree have obscured the general typhoid symptoms, and also tended to hasten a fatal termination. Too much importance, however, should not be attached to this condition of the arachnoid; since far more extensive lesions have been observed in fatal cases of typhoid fever, which had presented no cerebral symptoms—thus rendering it highly probable, that such lesions had occurred only a short time before death.

In connection with the anatomical appearances it may be observed, that notwithstanding the number of biliary calculi found in the gall-bladder (most of which were evidently of old formation), the patient had never had pain, jaundice, or other symptom indicative of their existence.

Case II.—*Acute Phthisis.*—Mary W——, aged 15 years, entered the hospital April 23, 1843. The following history was obtained from her friends. In January last her menses made their appearance for the first time, but since then they have not recurred. Several years ago, her mother died with consumption, and one of her sisters is now suffering with that disease; but our patient has enjoyed good health until seven weeks before entering the hospital, and has been regularly employed as a domestic in a private family. Her disease was ushered in by a chill, followed by high fever, cough, and pain in the chest; for which symptoms she was bled, and confined to bed for several weeks. Several days after the commencement of her attack she is said to have had hæmoptysis, but the amount of blood discharged could not be ascertained.

Upon admission, the case presented the following symptoms:—Dyspnœa, with lividity of the lips, and dilatation of the nostrils; respiration 40, and pulse 120 per minute. She expectorates about one ounce of thin watery mucus during the day; the cough is troublesome, and attended with some pain under left clavicle. Skin hot and moist; cheeks flushed, and forming a striking contrast with the general pallor of the face:—Emaciation but moderate.

Physical signs.—Dull percussion under left clavicle, with mucous rattle which completely masked the respiratory murmur; but there was no resonance of the voice at this part. At the upper third of left lung, behind, the respiration was slightly bronchial, and attended by a crepitant rattle—resonance of the voice, and dulness on percussion over the same extent. The vesicular murmur was remarkably feeble throughout the lower part of left lung; but the percussion was natural. Nothing abnormal could be detected on the right side.

Vini ipecac. ʒss. in mucilage every three hours. Tinct. digital. gtt. x. three times a day was also directed. The pain under left clavicle was greatly relieved by the application of 15 leeches. Diet restricted to broth.

Under the above treatment the symptoms gradually improved; and April 29th the fever, dyspnœa, and cough had so much abated, that the patient was enabled to sit up. The physical signs continued the same as at last report.

May 6th. Hectic fever, and copious perspiration; the expectoration still consists of watery mucus. Emaciation rapidly increasing. Crepitant râle at upper and posterior part of left lung, replaced by a large mucous rattle.

The tinct. digital. was now omitted, and solut. hydriod. ferri gtt. vi. to be used three times a day. Frictions with croton oil under left clavicle.

Up to the 9th, there was no important change in the general symptoms; but distinct gurgling, and bronchial respiration could be heard under left clavicle, and in this region the percussion was perfectly flat. The motion of the left side of the thorax was greatly diminished. Some puriform matter was now, for the first time, observed in the sputa.

16*th*. For the last few days the symptoms have been rapidly increasing; face flushed, great heat of surface, pulse 100 and feeble; respiration 45 per minute. The expectoration is decidedly puriform, and exceeding two ounces per day. The signs indicative of a cavity (cavernous respiration, pectoriloquy, and gurgling) were heard under left clavicle. The vesicular murmur, which hitherto had remained perfectly natural on the right side, was now entirely masked by sonorous, sibilant, and mucous rattles. During the evening exacerbations, mist. neutral. ℥ss. was occasonally administered; and in the mornings the sol. hydriod. ferri was continued, as before mentioned.

25*th*. Symptoms aggravated. The fever is now continuous, and attended with a rapid pulse, great dyspnœa, lividity of cheeks, lips and nails, and copious perspiration. The emaciation and prostration have also greatly increased. Stomach irritable; expectoration as before. The same treatment was continued, excepting that small portions of morphia were substituted for the vinum ipecac.

From this time the patient gradually became more feeble and emaciated. The difficulty of breathing was very distressing, and she was obliged to sleep with the mouth wide open; tongue brown and dry; teeth covered with sordes; anterior part of chest and neck dotted with sudamina. No cerebral or abdominal symptoms supervened, and the patient expressed herself as free from all suffering. Her strength was sustained for several days by wine whey and beef tea; but she gradually sank, and expired June 2, just forty days from the time of admission, and about twelve weeks from the commencement of the attack.

From the previous history of the case, it appears highly probable that the copious deposit of tubercles in the upper lobe of left lung was induced, or, at least, greatly increased by a previous attack of pneumonia, either primary or secondary. The crepitant rattle and other local signs induced me to suspect the intercurrent form; and it was under this view that leeches and nauseating remedies were first directed. That the local inflammation was of this character, is rendered the more probable by the fact, that the summit of the left lung is precisely the locality where tubercles are first formed and most deve p : whereas, primary pneumonia most commonly affects the lower lobes of the right lung. It should, however, be remembered that in young persons numerous exceptions are found to these pathological laws. Thus, in acute phthisis, cavities sometimes occur in the lower lobes; but more commonly, the tubercles are disseminated throughout the lungs, and prove fatal before softening, or the formation of cavities: and, with regard to primary pneumonia—it is now fully ascertained that in infancy and old age the upper lobes are not unfrequently affected; and, if we may judge from

a number of cases that have fallen under our observation, the same remark might be applied to young persons between the ages of 10 and 16 years.

Case III.—*Phthisis—œdema of left arm—examination post-mortem.*—William S——, aged 60, seaman, entered the hospital March 14, 1843. He stated that eighteen months ago he was first troubled with slight cough, but that his health was not much impaired until November last; about which time he had spitting of blood, followed by an increase of cough, and gradual emaciation. He has never had pain in his chest, none of his family have died of consumption, nor could he trace his present indisposition to any adequate cause. On entering, he presented the following condition:—Pulse natural; emaciation moderate; no hectic symptoms; he expectorates about three ounces of puriform matter per day, and complains of slight debility. Under the left clavicle the percussion is dull, voice slightly resonant, and expiration prolonged; but no rhonchus could be detected at this part. The vesicular murmur was very feeble at the upper part of the lungs posteriorly; but towards the base, the respiration was puerile. Sol. hydriod. ferri gtt. vi. three times a day—to be gradually increased to ten drops. Nutritious diet.

No change in the symptoms occurred up to April 7th, at which time he had slight bloody expectoration, and some excitement of pulse. The physical signs continued the same, excepting that some mucous rattle could now be detected under the left clavicle. The sol. hydriod. ferri was now omitted, and an infusion of prunus virginiana, with small portions of morphia, substituted. Under this treatment the bloody expectoration soon ceased.

25*th.* Hectic fever, and copious perspiration; increased debility; expectoration puriform, one ounce per day. Distinct gurgling under left clavicle; percussion flat from clavicle down to left nipple. Sonorous rhonchus under right clavicle. He now uses iodid. potass. grs. v. three times a day. Nutritious diet, and porter.

May 6*th.* For the last few days his expectoration has gradually increased, and now amounts to about five ounces per day. The emaciation has also evidently increased, and the patient is obliged to keep his bed. Pulse feeble and frequent; skin constantly covered with perspiration. Behind the fourth rib and near its sternal extremity, there is amphoric respiration, resonance of the voice, and gurgling—obscure percussion under right clavicle, and subcrepitant rhonchus at same part. The anterior part of the chest below the left clavicle is evidently contracted, but the space above the clavicle is distended by a great enlargement of the veins at the lower part of the neck.

11*th.* After a small dose of oleum ricini the patient was seized with severe diarrhœa, which produced great prostration, but was soon checked by mist. cretæ præparatæ and anodyne enemata. Features collapsed; pulse 120, and feeble; extremities cold, and covered with perspiration; voice reduced to a mere whisper; sputa nummular, exceeding five ounces. Considerable lividity of the face and left arm, which latter was also œdematous. The left external jugular was tortuous and distended. From this time the above symptoms became aggravated; and notwithstanding a nutritious diet, and stimulating plan of treatment, had been instituted, his strength was rapidly exhausted, and he expired May 21st.

Autopsy the following day.

A large, anfractuous cavity occupied the entire anterior surface of the upper lobe of left lung; the upper portion of the excavation was lined by an adventitious membrane, but below, the walls were formed by the pulmonary

tissue filled with tubercles. The right lung contained numerous tubercles in various stages of development. The summit of the left lung was invested by dense false membranes, and the cellular tissue exterior to the pleura was also greatly indurated, forming a cartilaginous mass more than half an inch thick. Both lungs adhered firmly to the costal pleura.

The larynx was completely ossified, and this degeneration had also extended to the root of the epiglottis. Near the left ventricle of Morgagni there was a small superficial ulcer. Several large ulcers were found in the upper part of the colon, but the small intestine was perfectly healthy.

The left vena innominata, at its upper part, was obstructed by a firm fibrinous concretion, which extended for some distance into the left subclavian and internal jugular. The concretion was formed of concentric layers, and adhered firmly to the valves and internal coat of the veins.

From the previous symptoms it will be perceived that the patient had evidently been labouring under phthisical symptoms for eighteen months previous to his admission; and, that during this time the disease had—as is usual in advanced life—progressed but slowly. When, however, the tubercles began to soften, the case advanced with great rapidity: the first indication of softening commenced April 7th, and by the 6th of the following month a large cavity had formed in the upper lobe of the left lung.

The anatomical appearances fully explain the distended condition of the veins above the left clavicle, and the consequent lividity and œdema of the left arm. The cause of the fibrinous concretion is not so easily ascertained; it appeared, however, to be due to the cartilaginous mass at the summit of left lung, pressing upon the extremity of the vena innominata, and thus obstructing the return of venous blood. There were no indications of a local phlebitis; for, although the inner coat of the veins was of a purple colour, this appearance was evidently the mere effect of imbibition.

Case IV.—*Phthisis, with large cavities confined to lower lobes.*—John M'F——, ætat. 19. This patient had been employed in a coal-mine, and stated that the left side of his chest was frequently bruised by the handle of a rake used at his work. Though minutely questioned upon this point, it could not be ascertained that he had any hereditary predisposition to consumption; nor had he ever had hæmoptysis. At the commencement of December 1842, he had a permanent dull pain under the left nipple, but his health continued good until the month of March following, about which time there was some cough, and his strength began gradually to fail.

He entered the hospital May 24th, 1843, presenting the following symptoms. The emaciation is but moderate, nor is his strength greatly reduced; face pale and bloated; pulse 80; skin cool; tongue natural; slight dyspnœa. Towards evening he has rigors, followed by fever and perspiration; and he expectorates about ℥ij. of yellow puriform matter during the day. Physical signs:—The left side of the chest at its lower part is slightly contracted; and posteriorly, percussion is flat from the angle of the scapula to the base of the thorax; over the same extent there is gurgling, pectoriloquy, and cavernous respiration. Anteriorly (below and to left of nipple) there is loud metallic tinkling, accompanied with amphoric respiration, and resonance of the voice, which also had a peculiar metallic vibration. Over the space

where the last mentioned signs were most distinct, the percussion was slightly tympanitic.

Throughout the upper part of the left lung, the vesicular murmur was feeble; under the clavicle the expiration was prolonged, with some crackling at this part. Whiffing respiration throughout right lung, excepting at its root, where there was bronchial respiration and bronchophony; percussion natural.

Sol. hydriod. ferri gtt. vj. three times a day; sulph. morphia, gr. $\frac{1}{12}$ occasionally; soup diet.

The symptoms presented no important change up to June 1st. His breath now become very offensive; sputa yellow, diffluent, and more copious than at last report; emaciation increased. By accurate mensuration the right side exceeds the left by an inch and a half; other signs as before mentioned; same treatment continued.

June 8th. About this time, there was a decided aggravation of the symptoms; constant fever, copious perspiration, rapid respiration, and languid capillary circulation. Slight diarrhœa and anorexia also supervened, and tended to increase his prostration. Physical examination afforded unequivocal signs of the formation of a cavity in the posterior part of the lower lobe of right lung. In addition to the other signs below the left nipple, there was now distinct gurgling. The above symptoms, with some slight modifications, continued up to June 14th, when the patient and his friends were anxious that he should be removed home, and he was accordingly discharged.

The contracted condition of the left side, renders it more than probable that the early symptoms were owing to chronic pleurisy, induced by the repeated contusions of that side. This form of pleurisy, even in sound constitutions, not unfrequently ends in confirmed consumption; and such we believe to have been the case in the above instance.

The disease was evidently much more advanced in the lower than in the upper lobes, as sometimes happens in early life: that the excavations were not the result of pneumonia or gangrene, is sufficiently shown, both by the general symptoms and physical signs.

The metallic resonance of the voice and respiration, as presented under the left nipple, is very unusual in large cavities, even where their walls are formed by thick cartilaginous membranes. This peculiarity in the present case, was most probably caused by the anterior wall of the cavity being formed directly by the thickened pleura adhering to the parietes of the chest; the hardness and elasticity of which would fully explain the phenomena. A local or circumscribed pneumothorax, communicating with the bronchi, might give rise to similar signs; but the former explanation appears to me by far the most reasonable.

Case V.—*Acute Pleurisy—obscure general symptoms.*—Christopher D——, ætat. 23, a labourer, entered the hospital June 3d, 1843. He stated that on the 14th of May he had cough and some headache, and that on the following day his indisposition was increased by a fall from a railroad car; he, however, continued his work up to June 28th, at which time he was obliged to keep his bed, and complained of slight pain in the right side, with difficulty of breathing.

On entering, his pulse was 75, and rather feeble; he had some cough, but no expectoration; respiration 16 per minute, but increased by the least exertion. At the root of right lung there was diffuse bronchial respiration, and obscure resonance of the voice; the vesicular murmur was very feeble throughout the lung, excepting at the summit, where it was perfectly natural; percussion dull from below the right clavicle, down to the margin of the ribs, and flat posteriorly from spine of scapula to base of lung. The motion of the right side was much more restricted than the left, and the natural vibration of the voice perceptibly diminished; intercostal spaces towards base of lung decidedly prominent. Cupped to right side; calomel and digitalis āā gr. j. combined with pulv. scillæ grs. ij. to be administered three times a day. Diet strictly farinaceous.

The following day, the patient was in all respects better, and the pain had been entirely removed by the application of cups. Notwithstanding the apparent enlargement of the right side, by accurate mensuration it was found to exceed the left by only half an inch. Nothing abnormal could be detected on the left side. In addition to the former treatment, the patient was to be occasionally purged by jalap and supertart. potassæ, grs. x. of the former with ʒj. of the latter.

6th. He felt greatly relieved, and wished to sit up; there was no dyspnœa, and but little cough, nor was there any excitement of pulse. For the first time, distinct ægophony could now be heard at the angle of the scapula; the vesicular murmur for several inches below the clavicle and spine of scapula was much more distinct, and the prominence of the intercostal spaces had evidently diminished, but percussion remained the same. A blister was now applied to the right side. The calomel and digitalis to be continued. The patient continued gradually to improve up to the 10th of the month, by which time the general symptoms had entirely disappeared, but it was still observed, that upon slight exertion he had some return of dyspnœa. The physical signs had also undergone considerable modifications; the respiration was now distinct throughout the upper two-thirds of the lung, and over the same extent the sound on percussion was moderately sonorous; the bronchial respiration and ægophony could no longer be heard, but there still remained slight resonance of the voice at the root of the lung. At the base of the lung, the dulness on percussion, feeble respiration and slight prominence still continued; nor could the line of dulness be varied by changing the posture of the patient.

For the last two days, symptoms of commencing ptyalism having presented, the calomel and digitalis were accordingly suspended; he was now directed an infusion of bac. juniper. and sup. tart. potassæ.

On 16th of June, he complained of soreness at the lower part of the chest and in the epigastric region, which was somewhat relieved by the application of dry cups. From this time his strength gradually improved under a more nutritious diet, and he left the hospital July 1st, considering himself perfectly well. The physical signs, however, continued the same as at last report, excepting that the resonance of the voice at the root of the lung had now entirely disappeared.

The only peculiarity presented in the above case, was the comparatively latent character of the disease. For two weeks after the commencement of the attack, he continued his work as usual, and was finally obliged to abandon it by the gradually increasing dyspnœa. At the time of his admis-

sion into the hospital, he had no fever, and but little cough or dyspnœa; and the pain of which he complained was rather a sense of oppression than of absolute suffering. The physical signs were, however, remarkably well defined, and clearly indicated a large accumulation of serum in the cavity of the pleura. Considering the extensive dulness on percussion and feebleness of respiration, it is somewhat remarkable that the enlargement of the right side was not more considerable: the distension was in a great measure confined to the intercostal spaces, and was most apparent during expiration; at the end of a full inspiration the right side exceeded the left by only half an inch, which is about the natural proportion between the two sides in right-handed individuals.

Under the treatment pursued in the above case, the effusion was rapidly removed; three days after admission it had sensibly diminished; and by the end of the week there remained but little serum in the pleural sac. The dulness on percussion, and feeble respiration at the base of the lung, continued when the patient left the hospital, and were most probably caused by an accumulation of lymph and false membrane.

Case VI.—*Chronic latent Pleurisy.*—James H——, aged 35 years, a mechanic, was admitted June 22, 1843. For three months he has had pain in his back, which he attributes to lifting a heavy weight; he also states that his health has been uniformly good, and that he has never had hæmoptysis or any disease of the lungs; his mother and sister, however, died of consumption. On entering, he complained of debility, and was somewhat emaciated and pale, but had neither cough, fever, nor expectoration; when at rest he had no dyspnœa, but after exercise he was evidently short-breathed. The respiration at the summit of left lung was feeble; over the lower third the vesicular murmur could be detected with great difficulty, and the sound on percussion was flat. On the same side, below, and to the left of the nipple, there was a loud friction sound during both inspiration and expiration; and the same sound, though less marked, could be heard posteriorly towards the base of the lung. When questioned upon this subject, he stated that for several months he had felt more or less motion in the left side, particularly when actively engaged at his work. The left side of the thorax was slightly larger than the right; but as the patient was left-handed the slight difference might perhaps be fairly attributed to that cause. Nothing unusual was detected on the right side.

Dry cups were applied to the left side, and the following day he was directed to use a liniment composed of one part of croton oil to two of olive oil. Iodid. potass. grs. v. thrice daily were also prescribed; and his diet was to be moderately nutritious.

June 30th. Under the above treatment his strength had evidently improved, and he no longer complained of pain; the physical signs, however, had undergone no change since his entrance into the hospital. The following day, he was discharged at his own request.

The above case, though imperfect on account of the short time it was under treatment, presents several points of interest. Judging from the constitutional symptoms alone, it would have been impossible to have formed

a correct diagnosis; for, there was neither cough nor fever, and but slight dyspnœa, which might fairly have been attributed to general prostration; even the obscure dull pain was not referred to the chest, but to the lumbar region. The fact of the patient ascribing his indisposition to a violent strain, was also calculated to lead into error; and in short, nothing but his attenuated appearance and hereditary predisposition, could have induced the least suspicion of a pulmonary affection. The dulness on percussion, feebleness of respiration, and the friction sound at the lower part of the left lung, were sufficiently characteristic of chronic pleurisy; but in this form of the disease the physical signs are by no means so well marked as when there exists extensive effusion. It is well known that chronic pleurisy of the left side, is very generally connected with tubercles; which consideration, together with the slight emaciation and predisposition of the patient, renders the ultimate prognosis highly unfavourable in his case. The feebleness of respiration at the summit of the lung, was also calculated to excite suspicion; yet it must be confessed, that neither the general symptoms, nor the physical signs, can be considered as perfectly conclusive of the tubercular character of his disease.

Case VII.—*Disease of the liver—Ascites—morbid appearances.*—Andrew T——, aged 30, of temperate habits, entered the hospital January 14th, 1843. About the middle of last August he had an attack of diarrhœa, which was soon relieved by the ordinary treatment; his health, however, was not fully restored; and, about two weeks after, he noticed a slight swelling of his abdomen, which has gradually increased up to the time of his admission. He was now evidently suffering with a large accumulation of serum in the cavity of the peritoneum. Notwithstanding that he was frequently purged by elaterium, and used for common drink an infusion of bac. juniper. with supertart. potassæ, the effusion continued to increase up to the middle of February, at which time the distension was such as to require the operation of paracentesis.

The patient did not come under my charge until the early part of March, when he presented the following condition:—Abdomen greatly distended; fluctuation distinct; but no visceral enlargement to be detected. Urine scanty, high coloured, and without trace of albumen; skin pale, and perfectly free from any yellow tint; constipation alternating with diarrhœa, but the fæces were of a natural colour. The scrotum, and lower extremities were œdematous, and covered with small petechial spots. He was emaciated and feeble, but complained of no pain, nor was there any symptom of pulmonary or cardiac disease.

As the patient was much oppressed by the abdominal distension—which on a former occasion had not yielded to purgatives, diuretics, or mercurials, it was not deemed expedient to recur to that plan of treatment; and he was accordingly tapped on the 15th of March, one month after the first operation. Upon this occasion, at least six gallons of greenish serum, slightly coagulable by heat, were drawn off, to the great relief of the patient. At the end of four or five days, however, the dulness on percussion at the lower part of the abdomen, clearly showed that the serum was again rapidly accumulating. With the view of exciting diuresis, and at the same time of

maintaining his strength, the following infusion was directed;—bac. juniper., sem. sinapæos, rad. zingiber, apii petroselini, āā ℥ss.; suc. pomorum Oij.;—a wineglassful occasionally.

No benefit, however, resulted from this treatment, and it was quite evident that nothing but an occasional resort to paracentesis could prolong life; the operation was therefore repeated on the 17th of April, and followed by precisely the same results as on the former occasion. His strength was sustained by small portions of wine and soup—an exhausting diarrhœa to which he had been subject, was checked by morphia and anodyne enemata. Iodine ointment was freely applied to the abdomen, and moderate compression maintained by means of a roller; but these different efforts were followed by the same want of success in preventing the reaccumulation of fluid.

By the commencement of May, the emaciation had greatly increased, and he was now suffering with all the distressing symptoms attendant upon extensive abdominal dropsy; the operation was however postponed until the 13th, when, at his own request, it was again performed. For several days after, he appeared as usual; but his tongue gradually became brown and dry, singultus supervened, and, although he complained of no pain, there was evidently increased tenderness of the abdomen, which was also distended and tympanitic. He expired on the 17th, four days after the operation.

Examination of the body, on the following day. Liver about half its natural size, and remarkably heavy. Its anterior third, including the margin of both lobes and also the lobulus quartus, was of a grayish white colour, unusually thin, and of nearly the consistence of cartilage. When incised, it presented a perfectly smooth surface, intersected with white fibrous bands, but without any remains of the original structure of the liver. On its under surface, near its anterior margin, were a number of firm white elevations about the size of a small pea. The blood-vessels of the indurated portion were filled with a yellow cheesy matter. The rest of the liver was congested, and perhaps firmer than usual, but in other respects healthy—gall-bladder contracted and containing no bile.

The sigmoid flexure of the colon was greatly contracted, and its mucous membrane, as also the submucous cellular tissue, were thickened and indurated. Spleen large and firm. The sac of the peritoneum contained about two gallons of greenish serum, mixed with shreds of lymph; and there was a considerable quantity of soft albuminous matter between the convolutions of the small intestine—serous membrane covering the abdominal muscles, minutely injected, softened, and easily peeled off.

In the above case, the natural condition of the heart, and the absence of albumen in the urine, together with the fact that the effusion into the peritoneum preceded the œdema of the lower extremities, led to the belief that the dropsy depended upon hepatic disease, notwithstanding the absence of jaundice, and our inability to detect any enlargement of the liver. The diagnosis was fully confirmed by the contracted condition of the liver, and by the obstruction of its large vessels; but the cause of this degeneration is by no means so apparent: for, the patient was temperate in his habits, had never had jaundice or other symptom indicative of an affection of the liver, nor had he ever suffered with intermittent fever. It is, however, not improbable that the diseased condition of the colon may have developed,

through the portal circulation, a morbid action in the liver, as not unfrequently happens in case of chronic dysentery.

The condition of the liver resembled closely atrophy of that organ, as described by Andral, in his Clinique Médicale.

With regard to the inflammation of the peritoneum—it was evidently of recent date, and most probably occurred only a few days before death; so that no importance can be attached to it as a cause of the ascites.

Case VIII.—*Disease of the kidneys—urea in the blood—morbid appearances.*—Mary F——, ætat. 22; admitted March 23d, 1843. Her health had been uniformly good up to the 1st of last January, when she had an attack of scarlet fever, and was confined to her bed for two weeks. A few days after the subsidence of the fever, she was sufficiently well to resume her domestic duties; but her face and feet became swollen, and she suffered with rheumatic pains to such a degree, that she was again obliged to take to her bed. From this time, until she entered the hospital, the prominent symptoms were irritability of stomach, painful micturition, constipation, and occasional epistaxis. According to the statement of her mother, from whom the above particulars were obtained, she had voided but a teaspoonful of turbid urine per day, for the last three weeks.

On entering, her pulse was 80, and feeble; tongue clean, but pale and tumid; teeth covered with sordes, and her breath very offensive. There was general œdema of the cellular tissue, but more particularly of the face and ankles; and the surface was remarkably pallid, and sensitive to the slightest touch. In the morning she had frequent vomiting, alternating with drowsiness, or even tendency to stupor; but these symptoms abated towards evening, and when roused, her intelligence was perfect. She had considerable thirst, but total loss of appetite.

On account of the prostration, wine whey and soup were directed; bowels to be opened by enemata; warm fomentations to abdomen. Calomel and digitalis āā gr. j. were also prescribed. The following day, a catheter was introduced, but the bladder contained no urine.

March 26th. Since last report, the secretion of urine has somewhat increased, amounting perhaps to ℥j. per day; a sufficient quantity, however, could not be obtained for analysis. In other respects the patient continued in nearly the same condition, and under the same treatment; but such was the irritability of stomach, that both medicine and nourishment were very generally rejected. The vomiting was somewhat controlled by the use of kreasote gtt. ij. every two hours; but the prostration and stupor gradually increased, and the following day I found her in a comatose condition, and with slight convulsive movements of the upper extremities. She expired the same evening.

The body was examined the following day: kidneys large and lobulated, and their investing membranes easily stripped off; weight of right kidney, ℥vj. and ℥ij.; of left, ℥vj. The cortical substance, with its prolongations between the pyramids, was greatly thickened and granulated; the granulations were very numerous and small, and they generally retained the natural colour of the organ, though some of them were of a pearly-white, and others pink. In addition to the above appearances, the kidneys were congested and softened, and contained several ecchymosed spots; and their surface was mottled with yellow, brown, and purple patches. In both kidneys, the tubular portion appeared perfectly natural; bladder contracted, and devoid of

urine. Brain remarkably moist and pale; even the plexus choroides was bloodless. The lungs also were pallid, but in other respects healthy. The heart contained but a small quantity of thin watery blood; mitral valve slightly thickened, but not sufficient to interfere with its free action.

Liver easily lacerated, and presenting a white granulated appearance, evidently owing to contraction of its vascular structure. The mucous membrane of the stomach was somewhat thickened, and very pale; and the same blanched appearance extended to the other membranous organs. The peritoneum contained two quarts of yellow serum; about ℥jss. of the same was found in the pericardium; and the cellular tissue throughout the body was more or less infiltrated.

A portion of blood from the ascending cava was subjected to minute analysis by my friend M. H. Boyè, and proved to contain urea in the proportion of gr. j. to the fluidounce; and it is to be regretted that the urine could not have been subjected to the same accurate examination during the life of the patient, since the result would have rendered the diagnosis more positive. The almost total suppression of urine; waxy paleness, and great sensibility of surface; general œdema; irritability of stomach; and the coma, in connection with the fact, that all these symptoms succeeded an attack of scarlet fever, left but little doubt that she was suffering with severe organic disease of the kidneys, and precluded all reasonable hopes as to her ultimate recovery. The presence of urea in the blood, sufficiently explains the comatose symptoms; and it is also apparent that the bloodless condition of the various organs must have increased the numerous functional disorders.

With regard to the anatomical appearances, the thickening of the mitral valve and of the mucous membrane of the stomach, may be considered as the commencement of those organic lesions which so commonly follow chronic disease of the kidneys; but the exact character of the renal affection is by no means so apparent. The injected, softened, and thickened condition of the cortical portion was evidently the result of inflammation; but it does not follow that the granular degeneration is to be attributed to the same cause, since simple nephritis seldom gives rise to such appearances.

Case IX.—*Nephritis—Pericarditis—Persistence of foramen ovale.* John W——, ætat. 24, labourer; application was made for his admission June 29th, 1843. On visiting him at his residence, I found him extremely ill, and unable to give any satisfactory account of his case; the following particulars, however, were ascertained from his friends. Formerly intemperate, but for the last two years his habits had been perfectly regular; and he had enjoyed uninterrupted good health, with the exception of an occasional pain in the small of his back, which he attributed to an injury received several years since. About the middle of last May, after exposure to a cold, damp air, whilst in a state of profuse perspiration, he was suddenly seized with severe pain in all his joints, and the pain in his back was at the same time greatly increased. The attack was followed by high fever, uneasiness in the region of the heart, and œdema of the lower extremities.

When first seen by me, his pulse was 110, and very feeble; complexion

pallid, but no œdema of the face; tongue brown and dry; teeth covered with sordes. He had great thirst, with frequent vomiting, and total loss of appetite; bowels perfectly regular; urine but slightly turbid, and sufficiently copious. The lower extremities were enormously distended with serum; and he complained of considerable pain in his hips, back, and left shoulder. On account of his great prostration, it was evidently impossible for him to be removed to the hospital; I, however, continued my visits in consultation with Dr. J. Neill, who now very kindly took charge of the case.

Under the use of beef-tea and carb. ammoniæ, grs. v. every three hours, his strength was somewhat restored by the following day. The pulse was less frequent and more developed, and there was less irritability of stomach than at the first visit. With the exception of slight roughness of the first sound, there were no indications of cardiac disease; and the vesicular murmur throughout the anterior part of the thorax was perfectly natural. The urine was copious, but slightly turbid, and without ammoniacal odour; when subjected to heat it became milky, but its consistency was not changed, nor were any flakes precipitated.

In addition to the former treatment, gr. $\frac{1}{8}$ of morphia was occasionally administered, with the view of relieving pain and procuring sleep; but it was soon evident that all treatment was useless, and that the apparent improvement of the previous day was delusive. His prostration rapidly increased; the pulse became slow and irregular; singultus and low delirium supervened; and the patient expired July 2d.

The body was examined forty-eight hours after death.

Both kidneys were lobulated and greatly enlarged, having nearly twice their natural dimensions; externally they were of a brown colour, and dotted with purple spots. The cortical portion was slate-coloured, and interspersed with yellow patches, greatly softened, easily lacerated, and evidently infiltrated with pus; at several points the pus was collected into a distinct abscess; the natural striated appearance of the cortical portion was not obscured by any development of its granular structure. The tubular portion was highly vascular, and the papillæ greatly enlarged. Pelvis in both kidneys discoloured, softened, and minutely injected; bladder contracted, and containing but little urine.

The different cavities of the heart contained firm fibrinous concretions, strongly adherent to the endocardium, and projecting into the pulmonary artery and aorta. The edge of the mitral valve was slightly thickened, minutely injected, and at several points covered with small soft vegetations; slight traces of inflammation were also found upon the margin of the aortic and tricuspid valves. The fossa ovalis at its upper part was not closed; admitting with ease the index finger. Heart soft and pale; pericardium natural. The mucous membrane of the stomach was thickened and indurated. Liver large and fatty.

The severe pains which the patient suffered about the middle of May, were evidently of a rheumatic character; and the inflammation of the kidneys and endocardium may be fairly attributed to the same cause. The fact that chronic nephritis is occasionally latent, and not unfrequently complicated with rheumatism, disease of the heart, and other organic lesions, might lead to a different view of the case, and induce the opinion that the affection of the kidneys should be referred to the injury which the patient had received several years before. If, however, we recur to the previous his-

tory, it will be perceived that the patient's health continued unimpaired after the receipt of the injury; and it is by no means probable, that such would have been the case, had there existed any serious disease of such important emunctories as the kidneys. The anatomical appearances also go to prove that the endocarditis and nephritis were of comparatively recent date.

The copious flow of urine, and the absence of comatose symptoms, render it highly probable that the blood was not poisoned by the presence of urea; and the want of deposit in the urine under the action of heat, tends, in some degree, to show that it was not albuminous to any considerable extent; it is, however, to be regretted that both the blood and urine were not subjected to chemical analysis.

The communication between the auricles in the above case, was evidently congenital, since there were no traces of inflammation or ulceration about the foramen; and yet, notwithstanding the laborious occupation of the patient, no symptoms of cyanosis had ever occurred. This corresponds with numerous other cases on record; and it is now generally believed, that no injurious admixture of venous and arterial blood results from a permanence of the foramen ovale, excepting in those cases which are complicated with some permanent obstruction to the circulation, or a want of proportion between the cavities of the heart. Much importance, however, has been attached to the general persistence of the foramen for several months after birth, as explanatory of some peculiarities in the diseases of early infancy. The subject is one of considerable interest, and well worthy of minute investigation.

ART. IV.—*Aneurism of the Femoral Artery from fracture of the Femur at its superior part—Ligature of the external Iliac Artery—Recovery.* By DANIEL BRAINARD, M. D., Professor of Anatomy in the Medical Department of the St. Louis University.

MARCH 1st, 1842, I was called to visit Dexter Graves, a highly respectable citizen of Chicago, Illinois, labouring under an ununited fracture of the femur. He gave the following history of the case:—Twelve weeks previously, in the early part of December 1841, while stepping from a carriage, he fell, in such a manner as to strike the upper part of the right thigh, at the inside, across the wheel. He was unable to rise, and a physician being called diagnosticated a "fracture of the bone." Provisional dressings were applied and the patient conveyed a distance of forty-five miles, to his own house in Chicago. Another apparatus was then applied by which extension and counter extension were kept up, and the limb kept in a straight position;

this treatment was continued twelve weeks, when the machine was removed and the fracture found to be ununited. At this time I saw him.

The following were the appearances observed:—The right limb was two inches shorter than the left, was everted, and considerable swelling about the hip and thigh. The foot could easily be brought down to a level with the other, but was immediately retracted on removing the extension. No crepitation could be perceived in any movement of the member. The shaft of the bone to near the trochanters could be felt, free from callus or fracture. The diagnosis was a fracture of the neck of the bone, but whether within or without the capsule there was no means of ascertaining with certainty. The general health of the patient had suffered much in consequence of his long confinement. He was pale, emaciated, affected with diarrhœa, loss of appetite, and profuse sweats. He had cough, expectoration streaked with blood—an examination of the chest revealed an extensive bronchial affection, but no signs of tuberculization.

Under these circumstances it was thought advisable to adopt some plan which would allow him to rise and take exercise, the restoration of his health being the most urgent indication. This was a thing of some difficulty, as the slightest movement was attended with excruciating pain. The immovable apparatus (starch bandage) was chosen and applied from the knee upward. Over a dry roller were placed several pieces of firm pasteboard, which externally and posteriorly extended as high as the crest of the ilium. These were covered with a roller immersed in paste of flour, several turns of which were passed around the pelvis. As soon as this was dried the patient was able to rise and walk on crutches, and in a short time was able to ride several miles. No change took place in the state of the limb except that at times it was painful and affected with spasmodic action of the muscles, when it was fully three inches shorter than its fellow. It may be remarked that the patient had felt pains in this limb of a rheumatic character previously to the fracture, they were however but slight and occasional. He remained in the same condition six months, wearing the starch bandage, which he could not do without, and with it I left him Oct. 20, 1842, to be absent at St. Louis during the winter. On my return, Feb. 17, 1843, (which was hastened by urgent applications on the part of the patient,) I found the upper part of the thigh occupied by a large tumour, the most projecting point of which was three inches below and a little anterior to the trochanter major. It was smooth, elastic, fluctuating, distinctly pulsating, giving the "*bruit de souffle*" on the application of the ear, subsiding in a marked degree on compression of the femoral artery, and becoming tense on removal of the pressure. Its inner margin was limited by the gracilis muscle, its outer at the most external part of the thigh; it extended upward to Poupart's ligament, and downward from that point twelve inches: the circumference of the thigh, embracing the largest part of the tumour, was twenty-five inches. It had been first perceived about twelve weeks previously, and rendered it necessary to

remove the paste bandage and had increased regularly until it acquired its present size. If the characters I have described could leave any doubt of the aneurismal nature of this disease this had been entirely removed by the exploration of the physicians in attendance, who, supposing it to be an abscess, had made a puncture through which a pint and a half of arterial blood had escaped before they could succeed in closing it. Compression of the femoral artery by means of a steel spring and graduated compress was then resorted to, but with no other sensible effect than the production of œdema of the limb from the obstruction of the venous and lymphatic circulation. The situation of the tumour, on the anterior and external side of the thigh, renders it probable that the anterior circumflex branch of the profound femoral artery was the one originally affected, but the course of the superficial femoral could not be traced, at the period when I first examined it, along the inside of the tumour.

Having observed the progress of the tumour for several days, in spite of the efforts made to check it, I determined on the ligature of the external iliac artery, and, the patient being in every respect in a favourable state, it was performed Feb. 24, 1843, in presence of several of the profession, and with the assistance of Drs. Sawyer and Davisson of this place, in the following manner:—

The patient remaining upon his ordinary bed, with his head and shoulders slightly raised, an incision was made three inches in length, commencing an inch within the anterior superior spine of the ilium, and directed, parallel to Poupart's ligament, toward the pubis. The skin, subcutaneous tissue, and superficial fascia were thus divided, and the aponeurosis of the external oblique muscle exposed. The *arteria ad cutem* required a ligature. The aponeurosis was next divided upon a director, the internal oblique and transversalis muscles with the spermatic cord were pressed upward with the fingers, the handle of the scalpel was employed to rupture the fascia transversalis, and the peritoneum was then gently raised with the fingers until the forefinger of the left hand rested upon the artery about two inches above the femoral arch. The slight investment of the artery was penetrated by the nail, and the needle known as Dr. Physick's, armed with a small silken ligature, passed under it. This was effected without difficulty, the point of the needle being carried between the artery and vein and pressed forward by gentle movements to and fro until it emerged on the outside of the artery. The point was then detached from the shaft and drawn out without embracing more than the artery itself, and without having raised or separated it from its surrounding tissues. The ligature was firmly tied in a double knot, one of its ends removed, the wound carefully sponged and its edges brought together by strips of adhesive plaster. Having had occasion during the winter, and previously to this operation, to put in practice, upon the dead subject, the different methods of placing a ligature upon this artery, I adopted the above mode of proceeding, as affording easy access to the vessel, with

the least possible liability to wound the epigastric artery or the peritoneum, or to allow a protrusion of the viscera. Its application in this case fully justified the choice, and in no respect could I wish to have modified it.

During the operation the patient suffered very great pain, was pale, cold and depressed, and was allowed two glasses of wine. When it was finished the pain still continued, passing with rapidity from the wound to the limb or to the abdomen, and was so severe as to make the patient cry out and toss himself about in the utmost agony. It was relieved by the sulph. morph. gr. ¼, repeated three times. The immediate effects of arresting the circulation in the artery were not perceptible in the general system, unless the pain and agitation could be attributed to it—the pulse sixty and feeble. The tumour immediately became flaccid, its circumference being one inch less than before. Three hours after the operation there was a sensation of numbness in the member and it was colder than the other; the sensibility gradually returned, and at the end of six hours was perfect; a state of exalted sensibility followed and was so great that the contact of a piece of flannel could not be endured. The natural temperature returned with the sensibility, commencing first above and extending to the foot, but there was not observed at any time an unnatural elevation of the temperature, or that activity of the capillary circulation which has been noticed in many cases.

During the first five days after the operation no material change occurred either in the member or in the system. The temperature and the sensibility of the former were natural. The pulse was 75, no febrile reaction, the patient urinated without difficulty, and on the fourth day had a stool from a lavement. His sleep was quiet and his appetite good. On the fifth day there was a slight discharge of pus from the wound. From the fifth to the fifteenth day he remained in the same state, being free from pain and all the functions regularly performed. From the 15th to the 23d day there were occasional pains and cramps in the affected limb, which were relieved by frictions and hot applications, and a troublesome cough, for which anodynes were prescribed. On the 23d day the ligature came away. The incision, however, continued to discharge pus for several days afterwards, and was not perfectly healed before the 45th day from the operation.

The tumour after the tenth day did not diminish in size, but remained stationary; frictions and the roller were applied, which latter could only be used at first with moderate force; by degrees the pressure was increased and the tumour gradually subsided. A covering fitted to its surface and laced on the outside, attached to a band about the pelvis, and the sides of which were rendered stiff by the introduction of pieces of thin pasteboard, was at length substituted for the roller, and was found more effectual in hastening the disappearance of the tumefaction. At present, on the 1st of June, this had entirely been effected, there remained only an inclination in its place, which extends over the whole anterior and superior femoral region, and confining the fragments and limiting their movements in such a manner, as to give the

patient great command over the member. It can be moved freely in every direction, and is capable of sustaining a great part of the weight of the body, the patient being able to move about freely and attend to his business. Whether a bony union may still be expected, must depend in a great measure upon the seat of the fracture; if this is within the capsule it is not to be anticipated; if without, it may take place. That this latter is the case there are strong reasons for supposing; not, however, enabling us to adopt the opinion without reserve.

Remarks.—The appearance of aneurism as a consequence of fracture of the femur has not been often observed, and its occurrence is calculated therefore to direct the attention to the time and manner of its production. In the present case there are three several ways in which this may be explained. By supposing the artery to have been injured by the violence which occasioned the fracture. Neither the manner of the fall nor the position of the limb after it, would justify us in adopting this explanation in the present instance. By the alternate elongation and contraction of the member; this, carried to the extent of three inches, and repeated frequently during a period of several months, might be supposed capable of impairing the integrity of the coats of the artery, but only after the lapse of a certain period of time, whereas in this case we have indications of its earlier existence. These indications were the unusual tenderness, the persisting tumefaction, the absence of bony union, although the value of this latter circumstance was diminished by the unsuitable apparatus employed, the improper manner of its application, and the doubt as to the precise point of the fracture. Still the position of the tumour, rendering it almost certain that its origin was from the profunda or its branches, coupled with the former considerations, will justify us in attributing it to the transportation of the patient, immediately after the fracture, so great a distance.

The laceration of the tissues, necessarily produced by the movements of a carriage, over a very rough road, a distance of 45 miles, must be very great, about the fractured ends, and to this we may with great probability ascribe the production of the aneurism in this instance; and from it we may derive a practical precept of caution in advising or permitting such a transportation in every similar case.

Chicago, Ill., *June* 15, 1843.

ART. V.—*Case of Rupture of the Uterus, in a woman who had twice undergone the Cæsarian operation.* By WM. BOWEN, M. D., of Massillon, Ohio.

FEW of the many histories of unfortunate childbearing are more painfully interesting to the medical reader, than the following; and certainly none, with which we are familiar, presents features in obstetrical surgery more extraordinary. Whether it be viewed in reference to the great constitutional stamina of the unfortunate patient, which enabled her to survive two successive operations, of the severity and danger of the Cæsarian section, or in regard to the circumstances which seemed to the practitioner who had charge of her case, to warrant a resort to such a hazardous procedure; the story of Mrs. S.'s lying-in-room adventures is one of such remarkable incident, and of such good and bad fortune, as to entitle it to a place among those told of others, on whom the primitive curse, "*In sorrow shalt thou bring forth children*" has been most heavily visited.

Mrs. S., after having had four unfortunate labours, two of which (the third and fourth) were terminated by the abdominal section, (her accoucheur, Dr. R. Estep, supposing she had deformed pelvis, which would render delivery of a living child at full time impossible,) had the good fortune in her fifth confinement, to give birth to healthy and vigorous twins, at full time and of large size; but falling in labour the sixth time, she suffered laceration of the uterus, and survived but a few hours.

For the details of this last labour, I am indebted to my friend C. H. Preston, M. D., an intelligent practitioner of this county; for the history of the preceding one, I am under obligations to Dr. Robertson, a skilful and popular physician of the adjoining county (Columbiana), while a circumstantial account of the third and fourth labours, in which the abdominal section was deemed necessary, and performed by Dr. R. Estep, has been published by the operator in the July No. of the "Western Journal of the Medical and Physical Sciences" for 1836. As it may be fairly inferred that the disastrous termination of the last labour of Mrs. S. was owing mainly to the weakened condition of the uterus at the place where it had been twice incised; and as the circumstances under which such bold and dangerous surgery had been previously practised, are given with some minuteness in the published report; the interest and value of the case which it is more especially our object to communicate at this time, will be enhanced by presenting to the readers of this journal such portions of that report, as seemed to the reporter to embody the best reasons for his practice. And whether these extracts be received as detailing a practice sanctioned by good sense and standard authorities, as conscientious surgery calculated to subserve the best interests of the patient, and worthy of imitation; or as a measure which in wanton violation of the plainest rules of obstetrical management, unnecessarily jeopardized the life

of the woman; they must still be regarded as parts of a document of no ordinary value.

In 1830, Dr. Estep informs us, he was called to attend Mrs. S., aged about 20 years, in her first labour: delivery was accomplished by the forceps; suspecting deformity of the pelvis, he made an examination, and "*found the antero-posterior diameter contracted to such a degree, as to preclude the possibility of her ever giving birth to a living child, approaching the ordinary size.*"

In 1832, he attended this woman again, and succeeded, with some difficulty, in delivering with the forceps of a "very small dead fœtus;" a more careful examination of the pelvis was now made, and it was found that the *sacro-pubic diameter at the superior strait, was reduced below two inches.*

In 1833, Dr. E. says, he was called a third time to attend Mrs. S., in labour; she informed him that she had been in labour several hours, and that during the third or fourth pain, she distinctly felt something "give way." From this account, Dr. E. suspected rupture of the uterus; he immediately introduced his hand, and "thought" he discovered a rent in the anterior wall of that organ, near its middle. Turning the child, with a view of delivering by the feet, was determined upon, (the presentation was one of the vertex.) The feet were brought down and the trunk delivered; but no efforts were sufficient to induce the head to pass; "*after three hours indefatigable exertion,* (he says,) *I was unable to get the head engaged in the superior strait. Relinquishing all hope of success by this artifice, and being thoroughly assured of the child's death, I now separated the head from the trunk, in the vague hope of being able to get a better diameter of the head, or by locking the finger into the chin, to be able to apply a more efficient force, but in this I was likewise unsuccessful.*" After fruitless endeavours to extract the head with a perforater, Dr. E. proposed and performed the section of the abdomen; he found a slight rent in the uterus, which he enlarged to the extent of five or six inches, and extracted the head through it; the placenta was delivered by the natural passages; the wound in the abdomen was closed in the usual manner, and the woman recovered in a short time.

In 1835 Mrs. S. was again in labour, and Dr. E. was called in consultation with Dr. Tolerton. This call, Dr. E. says, he was prepared for, by having "every instrument and agent which could possibly be called for in requisition, carefully packed up where I could lay my hands on them at any moment." On reaching the residence of the patient, and examining per vaginam, he found "an arm presentation and a dead child;" the evidences of the child's death are not given. The Cæsarian operation was again resorted to, without attempting delivery by any other method. This operation was as successful as the other; a dead child was extracted through the opening, and the woman soon recovered.

In 1838, Dr. Robertson was called to see Mrs. S., who was again in

labour: on reaching the house, he says, "I found she had given birth to healthy and vigorous twins; their large size, and the globular form of their heads left me no room to doubt the mother's having a tolerably ample pelvis: I removed the placenta, and satisfied myself that the pelvis *was not* as faulty as had been charged; making a pelvimeter of my hand, which I introduced for that purpose, I placed the ulnar edge of it upon the sacral projection, while its radial aspect scarcely touched the ossa pubis, thus giving the sacro-pubic diameter a space of about three and a half inches.

In 1841, my friend Dr. Preston, wrote me as follows: "Last week I was called to see Mrs. S., in consultation with Drs. Robertson and Carey; I learned that the labour had begun about eighteen hours previously; that a midwife had been called in, who found a vertex presentation, and gave promise that labour would soon terminate. The uterus had been acting with great energy, when suddenly the woman exclaimed, "something has given way;" considerable hemorrhage ensued, with vomiting and syncope; the uterine contractions ceased: in this condition Drs. Robertson and Carey found her, and matters had not improved any when I arrived. Examining per vaginam, coagula of blood were found, but the child's head was not within reach of the finger. These evidences, with those furnished by an external examination of the abdomen, made it plain, that the uterus had ruptured, and that the child had escaped wholly or in part into the abdominal cavity. I proposed attempting delivery by introducing the hand and searching for the feet, with a view of bringing the child back through the rent in the uterus and delivering it footling through the natural passages; but my colleagues, without doubting in the least the practicability of this method, were disposed to regard the woman as moribund, and to prefer that mode of delivery which would least endanger the life of the child, if perchance, it still survived; they therefore insisted on resorting to the abdominal section. Observing that a division of the abdominal integuments through the old cicatrix, would be unattended with pain or hemorrhage, owing to its imperfect union and organization, I acquiesced in the propriety of the measure, and I am certain that no mode of delivery would have saved the woman. Dr. Robertson performed the operation. We found the child dead, and almost entirely in the abdominal cavity—the uterus having given way through the whole extent of the former cuttings. After the child and secundines were delivered, the woman seemed to revive; but her last labour had come. She survived about 36 hours." Before leaving the patient Dr. Carey took special pains to ascertain the true dimensions of Mrs. S.'s pelvis—he avers that the transverse and conjugate diameters are of good size, but that the depth of it posteriorly is less than usual.

It will be perceived that the parties who paid obstetrical attentions to Mrs. S., have joined issue in regard to the size of her pelvis; Dr. E. assures us that the contraction was such as "*to preclude the possibility of her ever giving birth to a living child approaching the ordinary size:*" "*that the*

sacro-pubic diameter was below two inches," and of course it was upon this view of the condition of the pelvis that the propriety of the turning and decapitation of the child and the subsequent section of the abdomen, to deliver the trunkless head, in the third labour, and the immediate resort to the Cæsarian operation upon finding "*An arm presentation and a dead child*" in the fourth confinement, are predicated. Drs. Robertson and Carey declare the pelvis to be of tolerably "good size," that the sacro-pubic diameter, at the superior strait, measures at least three and a half inches. Without attempting to determine the truth of the matter at issue, by the number and credibility of the witnesses on each side, we think the circumstance of the birth of the twins, and the facility with which Dr. E. turned and delivered the trunk and extremities of the child he beheaded, establishes the truth of Drs. Robertson and Carey's declaration in regard to the matter, as clearly as if the pelvimeter of Coutouly or the calipers of Baudelocque had been applied, and had testified to a reasonable amplitude of pelvis.

Admitting Dr. E., however, to be correct in his estimate of the size of this woman's pelvis, was it not a strange practice which sought to *pull* a child, footling, through a pelvis contracted in its sacro-pubic diameter at the superior strait to "*below two inches?*" He is an industrious accoucheur who devotes his muscles to "three hours indefatigable exertion" to bring the large diameter of a fœtal head (occipito-mental, five inches) through an opening of less than two; and to have failed to accomplish so extraordinary a feat, is no proof of the want of respectable *physical* qualifications. Separating the head from the trunk, "*in the vague hope of being able to get a better diameter of it, or by locking the finger into the chin, to apply a more efficient force,*" was a device possessing strong claims to originality, but one which has not yet found favour in the eyes of our best obstetrical authorities. Dr. Dewees (page 580, System of Midwifery,) says, "*For what reprehension, indeed I had almost said punishment would be sufficiently severe for that practitioner who, after having destroyed the child should find it impossible to deliver it; and then for its accomplishment subject the poor woman to the Cæsarian section?*" If it is difficult to recognize the necessity for so perilous an operation as the Cæsarian, in the third labour of Mrs. S., it is by no means an easy matter to discover good reasons for resorting to it again in her fourth confinement. It would, however, be paying a poor tribute to the discernment of the reader to suppose him blind to the fact, that in conducting the third and fourth labours of Mrs. S., rules were set at naught, which have been held sacred to common sense by every writer on midwifery.

Massillon, O., *April* 12, 1843.

ART. VI.—*Aneurism of the Aorta—communication between the Trachea and Œsophagus.* By JOHN NEILL, M. D.

THE subject of this case was a gentleman 59 years of age, who had been known to labour under aneurism of the curve of the aorta since Jan. 1836, at which time he had an attack of acute disease, the symptoms and circumstances connected with which will be subsequently detailed.

July 18, 1843. *Autopsy*, 31 hours after death.—*General appearances.* Slight frame, stature below medium height, not much emaciation—chest rather narrow—upon percussion, dulness over the præcordial region, which extended beyond the right side of the sternum and as low as the sixth rib. Upon raising the sternum and cartilages of the ribs, a large *tumour* was found adhering to an erosion, involving three-fourths of the width of the sternum at the junction of the first and second bones, and also, the extremity of the third rib of the right side. Its shape was somewhat like that of a heart, with its apex downwards. The diameter of its base was seven inches, and the altitude nine inches. Occupying the upper part of the thorax it pushed the heart entirely below the sixth rib, and its posterior portion pressed upon the trachea just above its bifurcation. On being cut into, it proved to be an enormous aneurismal sac, including the whole of the curve of the aorta, commencing just beyond the semilunar valves. The sac consisted of three lobular portions, all entering into the common large cavity. The right superior lobe was that first observed imbedded into the eroded sternum and right third rib. The outer circumference of this was as large as that of a common sized orange. The part in contact with the sternum and rib was filled with a solid coagulum, which was laid bare by the coat of the sac being removed with the bones of the chest, to which they adhered like periosteum. The inferior lobe occupied the ordinary position of the heart, and was sufficiently large to admit the doubled fist of a man. It was partly occupied by a clotty, grumous, dark-brown fluid.

The left superior lobe was situated a little lower than the right; was very capacious: contained much fluid blood, and a coagulum at its posterior portion resting nearly opposite the bifurcation of the trachea.

There was no apparent rupture of the coats of this enormous common sac, formed by the dilated artery, which was sufficiently large to hold at least a quart. There was no particular dilatation of the innominata, subclavian, or carotid. The interior coat of the thoracic aorta below the sac was covered with scaly ossifications upon which the knife grated. The semilunar valves of the aorta were slightly thickened.

Aperture making a communication between œsophagus and trachea.—The pressure of the sac upon the windpipe had caused a partial absorption of three of its cartilaginous rings, the extremities of which presented calcareous deposits. Where the trachea was thus pressed backward upon the œsophagus

an aperture existed between the two natural passages one inch above the bronchi, sufficiently large to admit a common-sized goose-quill. A small hard septum separated this aperture from a little sinus which remained imperforate. The trachea exhibited marks of extensive inflammation in the parts which had been subjected to pressure, which diseased appearance continued downwards into the bronchial tubes. The interior of the œsophagus opposite the tumour and adjacent to the aperture was red, and its mucous membrane softened.

The heart.—Considerable difficulty was experienced in removing the pericardium, which was strongly adherent, the result of old inflammation. The heart was rather smaller than usual and its walls of proper thickness. The right auricle contained a dense fibrinous clot, about the size of a small hen's egg, not of recent formation. This clot rested upon the tricuspid valve, which it partially closed. This valve, together with the mitral, were thickened and contained fatty depositions. The cavity of the left ventricle was small.

Lungs.—The summits of both lungs were attached to the walls of the thorax by old adhesions, particularly that of the right side. At base neither were crepitant; but both were so solid as to resemble recent hepatization. The pleura pulmonalis of the left upper lobe presented patches indicative of former inflammation.

Immediately upon opening the cavity of the thorax I perceived the smell of assafœtida; a mixture containing a small portion of which had been given at intervals for two or three days previous to death.

The perforation in the gullet explains the manner in which this article had entered the lungs, from which it must have transfused itself through the tissues into the pleural cavities. A peculiar whiteness of the sputa whilst taking the mixture, consisting of lactis assafœtid., lactis ammon., &c. was also occasioned by the entrance of these into the windpipe.

For several days previous to death, all attempts to swallow fluids even in the smallest quantities were instantly followed by a violent cough and a strangling sensation.

The following note was made by the attending physician, Dr. G. Emerson, during the early stages of the disease, which proved fatal after the lapse of nearly seven years, under the circumstance disclosed by the post-mortem examination.

"J. G., merchant, aged about 53 years, of small stature, rather delicate form and sanguineous temperament, accustomed to an active, though not laborious life, first came to me for advice in July 1835, when he complained of pain in the left breast, and troublesome dry cough. Blood-letting, with other antiphlogistic treatment, was followed by relief. About the first of the following December he again called for my advice, complaining of pain in the region of the heart, with a quick hard pulse, and troublesome cough. Bleeding, rigid dieting, digitalis and pectorals, were followed by a

gradual abatement of the symptoms. Early in the month of January 1836, Mr. G. felt able to go from Philadelphia to New York on business. He remained at the latter place about a week, during most of which time the weather was very wet and inclement. The last day or two he was very much exposed. On his return to Philadelphia, he sent for me on the 15th of January, complaining of severe pain in the pharynx and upper parts of the œsophagus, with great difficulty in swallowing. His pulse was active and his cough very harassing, resisting all attempts to relieve it by means of the ordinary anodynes and pectorals. Bleeding from the arm, followed by leeches to the throat and upper part of the chest, with other antiphlogistic measures, were, in a few days, followed by an abatement of the pharyngitis. But this was immediately succeeded by an attack of intense pain in the region of the heart, with deep, dry, racking cough, which, as on the former occasion, nothing seemed to check. The little mucous forced up in coughing was sometimes streaked with blood. He complained of severe pain in the left side of the head, face and cranium. The bleeding and other antiphlogistic measures were persevered in and a blister applied over the left side of the chest. After four or five days, the violence of these symptoms abated, but the pain now shifted to the right side of the sternum, where in four or five days more a prominence was visible having a strong pulsation. This prominence was at the junction of the third right rib with the sternum, and had its pain increased by external pressure. The pulse was from 96 to 100 per minute, not irregular or intermittent, and without any thing like a thrill. The cough was unattended with expectoration, and was relieved by lying on the back a little inclined to the right side. Treatment, antiphlogistic, with infusion of digitalis. On the 4th of February the cough was only occasionally troublesome at night, the pulse about 96 per minute and less forcible. The pain in the pulsating tumour was relieved by leeches applied immediately over the part.

The patient was apprised of the nature of his disease, and advised to avoid any bodily exertion, remain as quiet as possible, and submit to every measure calculated to diminish the volume of blood and curb the force of its circulation. To this course he submitted with great patience and perseverance for several months, when he again began to walk out and attend to his affairs. From this period till his death, he had occasional attacks of pain in the region of the aneurism, attended with violent cough and other symptoms of aortitis. These symptoms, though sometimes very obstinate, always yielded to repeated bleedings and leechings, with repose and rigid dieting.

Exploration of the chest showed a dulness on percussion and loss of respiratory sound in the region of the chest extending from the right side of sternum about the union of the third and fourth ribs, to the region of the heart, with violent pulsation through every part of the chest, indicating the existence of a very large aneurismal sac. The prominence at first observed,

the beating of which was visible to the eye, had abated during the first months of treatment, and gave rise, with some, to the supposition that the aneurism had undergone a spontaneous cure. It was, however, but too evident that the dilatation was only arrested in its progress in one direction, whilst it proceeded slowly in others where it met with less resistance.

About the month of March last (1843), the cough which had long been very troublesome, became still more violent, and there was some complaint of a difficulty of swallowing. At night, on first going to bed the cough was always exceedingly violent and harassing. A position on the left side with the face inclining a little downwards, seemed to afford most relief. Little apparent advantage was derived from anodynes and antispasmodics. These symptoms increased, and in the months of May and June required very active antiphlogistic means to relieve them. On the 5th of July he laboured under a severe catarrhal affection with great discharge from the schneiderian membrane and subsequent free expectoration of mucus, with pains in the head and chest, all of which were evidently the result of an attack of the influenza, then very prevalent. But by far the most serious symptoms were a sense of choaking, and difficulty of swallowing fluids even in very small quantities without immediately inducing a violent convulsive cough. The breathing was at the same time attended with a wheezing sound indicative of obstruction in the trachea. The feet and ankles were somewhat tumid. But the pulse, though from 90 to 100 per minute, was regular, and never then or at any previous time, attended with that peculiar thrill which is so often associated with aneurism. About three days previous to death, a white emulsion had been given in small quanities, containing some milk of gum ammonia and milk of assafœtida. The expectoration brought up by coughing was, during this time, observed to have a peculiar milky whiteness. The flow of urine also became so scanty as to excite much anxiety on the part of the patient. Both the whiteness of the expectoration and the reduction of the urinary secretion, were evidently owing to the passage of the mixture and other fluids into the lungs instead of the stomach. On the night of the 16th and 17th of July, there was a continuation of great oppression in breathing, with a most harassing cough, somewhat relieved by lying upon the left side with the face inclined downward. On the morning of the 17th, after walking about the chamber and putting on some of his clothes, his breathing became suddenly very much oppressed, he reclined backwards upon a sofa, became convulsed and died in a very few minutes."

Art. VII.—*Speedy death from a large dose of Sulphate of Morphia.* By M. H. Houston, M. D., of Wheeling, Va.

The following melancholy case, showing the time and manner in which morphia is capable of producing death, may not prove uninteresting to the readers of the American Journal. The subject of it was Mr. Sprigg, aged 59 years, a lawyer by profession, but for the last four years actively engaged in agricultural pursuits. He was somewhat corpulent, rather disposed to plethora—of temperate habits, and possessed of unusual intellectual energy. A week or ten days before death, whilst superintending his harvest in the country, he was attacked with symptoms of mild intermittent fever of the double quotidian type, for which he took some appropriate remedies, under the direction of his son-in-law, Dr. C., who resided on his farm. The fever not yielding as readily as was anticipated, I was requested early on Monday morning, the 31st of July, to visit him in consultation. He was then labouring under a paroxysm of fever, attended by violent neuralgic pains extending down the back and lower extremities, but expecially severe along the course of the facial nerve on the left side. He also had an incessant, dry, hard, spasmodic cough, which could not be controlled, and which he feared might produce rupture of a blood-vessel. The paroxysm had commenced about one or two o'clock in the morning. I advised a more liberal use of quinine during the intermissions, and a quarter of a grain of morphia, with one grain of ipecac. a little before or at the very commencement of the paroxysm. Under this course, he escaped the evening paroxysm, but had a slight one at two or three o'clock on Tuesday morning. On Tuesday evening he expressed himself as feeling quite well. On Wednesday morning at four o'clock, I was summoned to visit him in great haste, but for what purpose I was not informed. On reaching his farm, four miles from the city, I found that he had been dead nearly an hour. From Dr. C. I received the following statement. Mr. S. had gone to bed, feeling as well as usual, but his daughter and Dr. C. being solicitous to prevent with certainty, another accession of fever, determined to sit up for the purpose of giving his medicine at regular intervals. This they continued to do, contrary to the wishes of Mr. S. until one clock, at which time he insisted on their going to bed, and on their still refusing, he got up, put on his clothes and went up stairs to the chamber of his wife. Dr. C. took from a glass jar a box of ipecac., one of tart. antim. and a paper containing 10 grains sulph. morphia, just from the apothecary, and followed him up stairs, for the purpose of preparing the anodyne powder. After preparing the powder he instructed Mrs. S. to administer it, if it should become necessary, and retired, leaving the paper of morphia on the table where he had been using it. After Mrs. S. had been some time in bed (the exact period not known) Mr. S. having a slight cough, requested her to get up and give him the

powder. This, she at first declined doing, believing that he did not require it, but when he insisted on having it, she got up, lit a candle, and being ignorant of the presence of more than one powder, she mixed and gave the first that presented, which proved to be the 10 grains of morphia. Without extinguishing the light, she lay down by the side of Mr. S., and to the best of her knowledge, had not lain more than ten minutes when her attention was attracted by a loud, protracted and unnatural snore. She shook Mr. S. and called him by name, but receiving no answer, she at once procured the light and found that he had ceased breathing, and that his skin communicated a very unnatural sensation of clamminess. She gave the alarm, and in a few moments, the mistake with all its horrid consequences became manifest. Dr. C. resorted promptly to such remedies as were at command. Liberal quantities of salt and water and strong coffee were poured down the throat through a tube. Various external applications were used, but with very little effect. The heart's action was partially restored, and there were some other transient indications of remaining sensibility. These however, soon subsided, and Mr. S. was entirely dead at four o'clock. The action of the heart continued for a considerable time, after all respiratory efforts had ceased. Thus terminated the life of one of our most prominent and useful citizens.

The points of interest in this case were, the absence of all *violent* symptoms, and the very short space of time in which the poison produced its fatal effects. Excepting the one deep stertorous breath, all was calm and quiet, and although but little reliance is to be placed on the computation of time under such trying circumstances, yet facts enough are well ascertained to satisfy my mind, that not more than an hour, or at furthest an hour and a half, could have elapsed from the time the medicine was swallowed until death took place. The mistake was discovered in less than fifteen minutes after it was made. As soon as discovered, a messenger was despatched to town in all haste. That messenger arrived here, a distance of only four miles, precisely at four o'clock, and certainly in less than an hour from the time he started.

Would galvanism, the stomach pump, and other appropriate remedies, promptly applied, have proved efficient in resisting the fatal tendency of the poison?

No post-mortem examination was instituted.

Wheeling, *August 1st*, 1843.

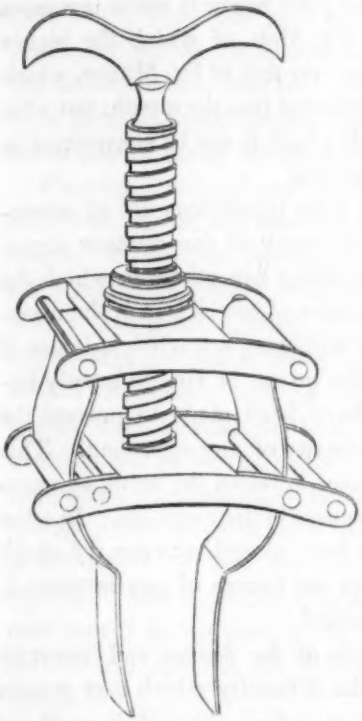
ART. VIII.—*Two cases of Immobility of the Lower Jaw, successfully treated.* By DANIEL BRAINARD, M. D., Professor of Anatomy in the Medical Department of the St. Louis University.

SYGNA Jouçou, ætat. nine years, has had for years an immobility of the lower jaw almost complete, its movements being so slight as scarcely to be perceptible. It was produced by a salivation occasioned by the injudicious use of calomel during a remittent fever.

Sept. 1, 1841.—The case presented the following appearances:—On the right side, at the angle of the mouth, there is a firm cicatrix half an inch in diameter, the result of an ulceration which had involved the entire thickness of the cheek. It extended in form of a firm band between the gums of the canine teeth of the upper and lower jaws, forming a barrier to the passage of any thing within the cheek. From this cicatrix to the root of the coronoid process, the jaws are united by a ligamentous structure to which the inner surface of the cheek firmly adheres. On the left side a similar band, to which the cheek is attached, extends from the coronoid process to the dentes cuspidati. The contraction of these structures has been so firm that the face is considerably shortened and deformed, the cheeks projecting, and the superior incisors, pressed from within by the inferior, stand out almost horizontally and are not covered by the lips. The speech is scarcely intelligible, the breath is offensive, she can take no solid food, and her health is much impaired.

On the 7th September, in presence of Dr. S. Willard, and Mr. Wm. Butterfield, student of medicine, the following operation was performed for her relief. The cicatrix on the right side was separated from the gums above and below, and the cheek detached freely from its adhesions; the ligament which extended between the jaws was then divided—it was very firm. The same process was then repeated to the requisite extent on the left side. The attachments being thus in a good measure removed, strong efforts were made to separate the jaws with the hands, but without success. Recourse was then had to a screw and lever, prepared for the purpose, by the aid of which the jaw was without difficulty depressed.

The instrument made use of for the purpose was formed by adapting two small plates of steel to the common tourniquet divested of its band. These being passed through the apertures in the lower part of the tourniquet, their superior recurved extremities resting under the rollers of the bridge, and the other ends being brought in contact by a gentle curvature, it is only necessary to turn the screw in order to separate these latter to the required extent. A glance at the accompanying figure, which represents the plates slightly separated, will render this description intelligible.



On opening the mouth nearly all the deciduous teeth, except the incisors, were found, with the alveolar processes, lying quite loose, keeping up ulcerations and giving rise to the fetor of the breath before mentioned. Small blocks of wood were placed between the incisor teeth in such a manner as to keep the mouth fully open, and allowed to remain during the period of cicatrization, being only removed to allow the patient to take food and drinks. The use of these was by degrees discontinued, the jaws were to a certain extent approximated, and at present, June 1st, 1843, more than twenty months since the operation, there is three quarters of an inch between the teeth, the speech is restored, she takes any kind of solid food, and the deformity is entirely removed.

Case II.—Sophia Thill, ætat. 17 years, had in February 1842 a remittent fever, for which she took calomel to ptyalism. Ulceration of the left cheek followed from which there remained a deep cicatrix, an inch in breadth, which involved slightly the anterior margin of the masseter muscle.

On the 17th July 1842, a similar operation to the former was performed. In five weeks the wound was cicatrized, the patient was able to open the mouth more than an inch, and the movements of the jaw were perfect. Such was its condition also ten months later.

In a case similar to the latter, reported in the American Journal of the Med. Sciences for Nov. 1829, Dr. Mott divided the cheek to get at the adhesions, which, however, was not done by Dr. Mighels in a case reported in the same Journal, No. 17. In a case resembling the first, Dr. Mott performed an "autoplastic" operation, removing the cicatrix and taking the necessary integument to fill the space from the side of the neck and face, "as the only means of overcoming the closure of the jaw." The result of the first case, given above, shows satisfactorily that this may be effected to the requisite extent by other means. Indeed the method adopted was only a modified application of the same principle, autoplasty after the method of France or the French method. The free separation of the cheek brings it, when the mouth is pressed open, from above and below to supply the place of the lost substance; in this situation it adheres, leaving a portion of its substance free, between the gums of the upper and lower jaws, to which it is fixed.

The instrument employed to separate the jaws might in some instances have an advantage over that employed by Dr. Mott, of which the blades diverge very much when open, and in others over that of Dr. Mütter, which in a case of perfect closure could not be introduced into the mouth; but what especially recommends it is the facility with which it can be constructed in any place without the aid of an instrument maker.

Ulcerations and sloughing of the mouth from injudicious use of mercurials are accidents of excessive frequency in many of the western states. In addition to the cases here given, and excluding two others in which the sloughing resulted fatally, not less than five cases of partial loss of the movements of the jaw from this cause have come within my knowledge; in one of these the tongue had been involved and the power of speech greatly impaired. From their frequency, attempts have been made to prevent the closure of the jaw and thus obviate the necessity of any operation. This has been attempted by putting some substance between the teeth, an expedient which does not succeed, from their looseness in their sockets. In other cases, pieces of silver or other metal have been placed between the cheek and gums to prevent their union, but I have not known of any instance in which a favourable result has thus been obtained.

Measures calculated to limit the extension of the disease and favour its speedy cure are to be put in practice, and the deformity which may remain can in most instances be in a great degree remedied, although it could not be prevented, by surgical means.

Chicago, June 5th, 1843.

Art. IX—*Case of Traumatic Tetanus, in which the Sulphate of Quinia was successfully used.* By John W. Malone, M. D., of Quincy, Florida.

On the 15th of May, my colleague, Dr. William Booth, was called to see a negro girl about 12 years old, of sound constitution, labouring under the usual symptoms of tetanus, particularly that variety called opisthotonos. The history of the case was as follows:—About ten or twelve days previously, she said, "she stuck a nail in her foot," to which a lye poultice was applied, but suffering no farther inconvenience from it, no particular attention was given her, until the muscles of the extremities became rigid, with inability to move without inducing spasm; stiffness of the jaw supervened, and the spine was drawn back in a curve, all of which was supposed to have been produced from a fall she received on the day these symptoms occurred. She was bled, had her bowels operated on and took morphia, but the symptoms became more violent, and excited in the minds of the family, the suspicion that they might be produced from the wound in the

foot, which they had supposed well. An examination was consequently made, and pus was squeezed out from the punctured surface, at which time my colleague was sent for. He made a free incision into the foot: applied a lye poultice, administered opiates and calomel, and had the butter of antimony rubbed along the whole spinal column.

Tuesday, 16*th*.—I saw her for the first time this morning, in the absence of Doctor Booth, and removed from the foot a splinter more than an inch in length. Symptoms more aggravated, great spinal recurvation, the mouth can scarcely be opened, frequent spasms about the throat, tongue loaded with yellow fur, great rigidity of the extremities, epigastric region tense and unyielding, and pulse tense and quick. Applied spts. turpentine to the wound to promote suppuration, continue lye poultice: Ol. Ricini ℥ss., Ol. terebinth. ℥i. to move the bowels, and laudanum to subdue spasm. In the evening, we both visited her together, and finding no amelioration of the symptoms, we determined to bleed her copiously, and then to use laudanum in large doses, so as to keep the system completely under its influence, and if this course did not succeed, we then concluded to try the effects of the quinine. The laudanum was tried for two days and nights, with no permanent benefit to the patient, the spasms returning with increased violence, as soon as we suffered the system to get from under the influence of the opium.

Thursday, 18*th*.—The case appears to be hopeless; the pulse ranges from 135 to 140, the epigastrium is firm and unyielding; no suppuration is induced in the wound, although the most active irritants have been used; the rigidity of the muscles is increased, frequent spasms extend from the foot to the stomach and from thence to the throat; pain in the epigastric region upon pressure, and frequent hiccups—five grains quinine, 15 drops laudanum in a glass of wine were now given every two hours, and 15 grs. calomel were also ordered to be followed by oil or injections in the evening. The quinine was discontinued after taking 15 grains, from its having produced *tinnitus aurium* with *partial deafness*. Copious perspiration with less frequency of pulse and an increase of volume followed, together with a partial relaxation of the muscles. The following treatment was now adopted and continued with but little variation, throughout the case:—sulphate quinine three grains, mur. morph. gr. $\frac{1}{3}$, to be taken every three hours, with an occasional glass of wine. The wine had to be largely diluted in order to prevent its inducing hiccup. The bowels were kept open with castor oil and injections, and on the 29th of the month she was discharged convalescent.

Remarks.—Notwithstanding the violence of the symptoms, and the great muscular contraction that existed, still the patient complained of very little pain except when an attempt was made to move her, by raising her up or bending a limb, or when operations were induced upon the bowels, or irri-

tants were applied to the wound in the foot. Violent pain and spasm of the stomach and jaws were excited in every instance by these remedies, and notwithstanding its extreme sensibility, still no suppuration ever followed the application of spirits turpentine, blistering ointment, lunar caustic, &c. which were freely used for the purpose of promoting it. As soon, however, as the remedies were discontinued, the edges of the wound sloughed off, and it healed up immediately, as it were, by the *first intention.*

I will remark, in regard to the effect of the constitutional remedies used, that as long as we kept our patient completely under the influence of opium, the spastic rigidity of the muscles partially gave way, but soon returned with increased violence, whenever they were discontinued; but when the quinine in conjunction with the morphium, was resorted to, a continued and copious perspiration was kept up, the pulse became less frequent, and increased in volume, the spasms returned at longer intervals and gradually subsided, the rigidity of the whole muscular system yielded, the spine lost its abnormal curvature, and on the tenth day after this treatment was adopted she was able to sit or stand up, and on the fourteenth day from the time we saw her, she was discharged, labouring under nothing but slight debility and some distortion of the countenance. The quinine was continued, however, for several days, in small doses, after we stopt visiting her, in order to keep the system slightly under its influence, so as to prevent any accumulation of muscular irritability and to impart to it energy and healthy action. Large doses of quinine has the remarkable effect of diminishing the rapidity of the pulse, where active inflammation does not exist in any important organ, such as the brain, stomach, intestinal canal, &c. and it has never in my hands failed to be beneficial in all febrile diseases, where, together with the effect mentioned, a general perspiration is established. It calms nervous excitement, quiets restlessness, removes all those transient and disagreeable pains, to which the *fever patient* is frequently subjected, and acts in many respects in perfect accordance with the general idea we have of a *sedative.*

It is also proper to add in conclusion, that the butter of antimony applied early in the disease, to the whole extent of the spinal column, produced considerable and immediate inflammation, but we did not observe any manifest or permanent benefit from its use.

Quincy, Florida, *June* 22, 1843.

REVIEWS.

ART. X.—*On the Nature and Treatment of Stomach and Renal Diseases, being an Inquiry into the Connection of Diabetes, Calculus, and other affections of the Kidney and Bladder, with Indigestion.* By WILLIAM PROUT, M. D., F. R. S., &c. Fourth edition, revised—London, 1843, 8vo., pp. 593.

THE second edition of this work was published in 1825; and although for many years almost the only treatise in the hands of the medical profession, concerning the important relations of renal disease to indigestion, its progress towards popularity was greatly slower than that of the edition of 1840, which, nevertheless, divided public attention with many other works, and especially with that of M. Rayer, so remarkable for its completeness and accuracy, as well as for the pictorial illustrations that accompany it. The present edition is essentially the same as the last; the third book, however, was originally printed as an "Introduction," and, as its contents are, for the most part, elementary views of organic chemistry, and of the physiology and pathology of assimilation, we shall, in this notice, restore it to its former and natural position. Without a previous acquaintance with these facts and doctrines, the body of the work would, we fear, prove quite unintelligible to any but an accomplished chemist; the general reader would lay it aside impatiently, on discovering that a book professing to be "practical" drew many of its precepts from theories of which the very nomenclature was new and peculiar, and thus abandon what the general voice of the medical world has pronounced to be a source of highly valuable instruction.

In the absence of any previous account of Dr. Prout's treatise, a detailed examination of it is, perhaps, now due to the readers of this journal. A critical review of its doctrines is not, however, the present object, for such a task would involve the necessity of a controversial discussion, in which the views of Liebig, Christison, Solon, Rayer, Jones, Becquerel, and many others would demand a comparison with those of our author; and the writer of this article feels neither the inclination nor the ability to undertake a controversy upon ground so uncertain as that of organic chemistry, where the doctrines of a professor have as little permanency as inscriptions upon the sea-shore, and where the successful support of a theory seems to depend rather upon the ingenuity and dexterity of its defender, than upon his being armed in the panoply of nature and of truth.

After having stated that, in general, the ultimate principles of vegetable bodies are hydrogen, carbon, and oxygen; while animal bodies have superadded a fourth, namely, azote; and that in both classes are to be found certain additional principles such as sodium, phosphorus, iron, chlorine, sulphur, &c., Dr. Prout considers the four great classes of alimentary proximate principles; the *aqueous*, the *saccharine*, the *albuminous*, and the *oleaginous*. Of these, the aqueous is of, perhaps, the first importance, not only

on account of its forming four-fifths of the weight of the blood, and nearly three-fourths of that of the solids, but because it is the medium through which nearly all the operations of the economy are conducted, and is apparently necessary to the production of vital phenomena. Saccharine bodies are derived chiefly from the vegetable kingdom, and are either crystallizable, as sugar and vinegar, or uncrystallizable and organized, as the different forms of the amylaceous principle, lignin, and gum. Albuminous aliments are furnished principally by the animal kingdom, and all of them contain azote. They are not naturally crystallizable. The principal modifications of them are gelatin, albumen, fibrin, curd, and gluten. Oleaginous bodies are divided into fixed and volatile. The latter are principally derived from the vegetable, and the former from it as well as from the animal kingdom. The principal fixed oils used by man, are suet, lard, butter, train oil, olive oil, nut oil, &c. Almost all natural oily bodies are divisible into two portions, of which one is usually more or less solid (*stearine*), and one always fluid (*oleine*). Of these proximate alimentary principles, the saccharine contains from forty to fifty per cent. of carbon; the albuminous from fifty to seventy-five per cent.; and the oleaginous about eighty per cent. of this principle. One of the most remarkable features of these bodies is the readiness with which, under the influence of the organic agents, they pass into, and combine with one another. They are, further, all susceptible of transmutation into new principles; thus, the saccharine principle is convertible into oxalic acid; or, under other circumstances, into modifications of the oleaginous principle, as alcohol, &c. These modifications are, however, either confined to glandular secretions; or are excrementitious, or extra-vascular; they form no part of the living animal producing them, although they are often attached to it, as in the case of shells, &c. in the molluscous tribes.

Now, since there is identity between the composition of animal bodies, and the food by which they are nourished, and since they are essentially constituted by the four "staminal principles" just enumerated, it follows that the food of the more perfect animals should contain more or less of each of these principles; and such indeed is the dictate of experience as well as reason. The only universal and natural animal food is milk, every sort of which is a mixture of the four staminal principles; and it would hardly be possible to name a substance, constituting the food of the higher animals, which is not essentially a natural compound of at least three, if not of all four, of the great principles of aliment.

We have next to inquire how these nutritive materials are disposed of when received into the animal economy. Dr. Prout describes the various changes to which they are subjected, under the heads of primary and secondary assimilating processes. The former of these comprises the process of digestion, and the intermediate processes up to sanguification, inclusive, and is considered chiefly in its relations to secondary assimilation, presently to be noticed. The operations of the stomach are all of a *reducing* kind; that is, the alimentary matters are reduced by them, and through the admixture of water, to the "*lowest*" possible condition. In this state the chyle, entering the lacteals, becomes gradually "*raised*," till it reaches the thoracic duct, where its properties are found to be considerably developed. Then entering the blood-vessels, it is finally rendered "*complete*" by subjection to the respiratory process, and is adapted to the purposes of nutrition. The reducing operation of the stomach is viewed

by our author as essentially chemical, and as consisting in the combination of the elementary matters with water. The result is the production of chyle, which, although the proportion of its ingredients may vary, and although it may be formed from various sorts of food, is really constant in its composition. This process, also, Dr. Prout considers as chemical. The *completing* process, on the other hand, by which the weak and dead aliment is raised to strength and aptness for union with the living body, must unquestionably be vital. The reduction of food in the stomach is effected through the agency of the gastric juice, of which chlorine, in some state or other of combination, would seem to be a necessary ingredient. This chlorine is furnished by the muriate of soda in the blood, and by means, Dr. Prout suggests, of "some modification of electricity." The phrase we have quoted, is too often employed by philosophers who, not satisfied with unveiling many of the mysteries of nature, would overleap the boundary which separates material from vital phenomena. An illustration of this tendency occurs also in the following paragraph.

After establishing the fact that muriatic acid is yielded to the stomach by the blood, Dr. Prout inquires, what becomes of the soda from which it is separated? A portion of this, he says, "is requisite to preserve the weak alkaline condition essential to the fluidity of the blood, but the larger part is probably directed to the liver, and is elicited with the bile in the duodenum, where it is thus again brought into union with the acid which had been separated from the blood in the stomach..... We have in the principal digestive organs *a kind of* galvanic apparatus, of which the mucous membrane of the stomach and intestinal canal, generally, may be considered as the acid or positive pole, while the hepatic system may be considered as the alkaline or negative pole."

Dr. Prout and Liebig agree in considering lactic acid in the stomach as the result of a deranged function, and not, according to the opinion of many chemists, as usually produced during the digestive process. It is probably sometimes furnished by the blood, and sometimes by the decomposition of ingesta. Oxalic acid when not introduced into the stomach with food, as in sorrel, the esculent rhubarb &c., is always a result of disease.

It has already been stated that whatever be the nature of the food, the general composition and characters of the chyle formed from it remain the same. Hence we must ascribe to the stomach "*converting*" powers, by virtue of which aliments that are not adapted for speedy assimilation, may be fitted for the purposes of nutrition. The albuminous and oleaginous principles are readily assimilable without any essential change in their composition; but the saccharine is not so, without considerable modification. Under *ordinary* circumstances the converting powers of the stomach change the saccharine and albuminous principles into the oleaginous, and the last, as well as the saccharine, into the albuminous. "The conversion of saccharine into albuminous and oleaginous matter is by far the most important. It is the last that ceases to exist in an animal; and often remains, to a certain extent, long after the power of appropriating albumen and oil have ceased." We do not think it very clearly appears how albuminous or oily matters produced by the conversion of saccharine aliment, should be appropriated with greater facility than are such matters when originally introduced into the stomach. Under *extraordinary* circumstances, Dr. Prout thinks that "the assimilating organs appear even to decompose prin-

ciples which are still considered as elementary, and thus to *convert* them into azote or carbon; so that it is impossible to define what, on an emergency, these organs are capable of doing."

To the organizing and vitalizing function of the stomach, Dr. Prout refers all those changes which cannot be referred to chemical laws, as well as those individual peculiarities which have originated the proverb, "one man's meat is another man's poison." He also points out that although the reducing, converting, and organizing processes are sufficiently distinct from one another, yet they do not take place in succession, but go on all at the same time; so that as soon as a portion of food begins to be dissolved, its future changes seem to be determined. The consequence of this union of the digestive processes is that the staminal principles are all developed in the chyle as soon as the excrementitious matters are separated by the biliary and pancreatic fluids.

Dr. Prout uses the term *secondary assimilation* as including the *formative* processes, or those by which the principles of the blood are converted into the several tissues, or into secretions designed for ulterior use in the economy,—and the *destructive* processes, including the extinction of the different tissues, and their conversion into new principles for further use, or for excretion. These processes are conducted according to certain general laws, to one of which it may be well to allude. When a definite substance is converted into one or more new principles, these latter are complementary, one to another: that is to say;—the composition of either must be such, as that taken together with the other, it will form the original substance. Of the new principles, one or both may be excrementitious, or designed for further use in the economy.

Thus albumen and gelatine are converted into principles, one or both of which are applied to further uses in the economy; whereas, in peculiar states of disease, gelatine appears to be almost wholly converted into some modification of the saccharine principle, and urea, both of which may be considered as excrementitious. The *incidental* mineral elements present in organized bodies do not assume the form of binary compounds during a state of health, and when found so combined, they indicate the malassimilation or destruction of the tissues, and sometimes the particular tissue affected by disease.

Dr. Prout considers the formation of gelatine from the albuminous principle of the blood as of high importance, not only because the gelatinous tissues form the frame-work of the body, but because their elaboration is nearly connected with the respiratory process. "For when albumen is converted into gelatine," says Dr. P. "carbon is eliminated, which remains associated with the venous blood till its arrival in the lungs; where, by combining with the oxygen of the atmosphere it is converted into carbonic acid gas; in which form it makes its escape from the body." It will be observed that this theory is opposed to the one most accredited, and which supposes the venous blood to contain carbonic acid fully formed, so that on reaching the lungs, this gas is excreted, and its place supplied by oxygen.

No very decided opinion is expressed by our author touching the ulterior changes of the albuminous principle, although he does not doubt that certain portions of the albuminous tissues become effete, and are removed from the system, during the destructive assimilating processes, under the

form, in part, of lithic acid which is usually in combination with ammonia. Of the ulterior changes in the oleaginous principle very little is known.

A section of the work before us is devoted to an inquiry into the general pathology of the primary and secondary assimilating processes. In regard to the former of these it is stated, plausibly enough, that the source of evil is most frequently in some derangement of the reducing power of the stomach, for what is not reduced, or dissolved, can never be converted, still less vitalized, but must either remain in the intestinal canal, or being absorbed into the circulation, in the form of some non-assimilable product, must be rejected either with the bile, or the urine. Hence a fruitful source of disease. Our author looks upon the period of adolescence as that in which the greatest danger arises from derangements of the converting process in its first stage. At that period, during a state of health, the portions of chyle which have not been appropriated by the economy are usually passed off in the urine under the form of lithate of ammonia. But if from constitutional weakness they are not so disposed of, they yet either fail to be converted into blood or "are mal-converted into the comparatively insoluble pseudo-albuminous matter of struma; which in passing through the lungs lays the foundation (perhaps at first mechanically) of tuberculous deposition, and future accretion. . . . . Strumous, lithic acid, and gouty diseases, are all the results of mal-assimilation of the albuminous principle, and often gradually run into one another. The gouty chalk-stones of old age may be considered as little more than modifications of the scrofulous tubercle of youth. Moreover, the offspring of those labouring under gout and struma are more subject during the period of adolescence, to tuberculous phthisis than other individuals." It is an opinion established upon unquestionable facts that scrofula and gout usually occur under conditions directly opposed to one another; the one in persons subjected to fatigue, want of light and air, and obliged to subsist on vegetable food, while the other attacks chiefly the indolent classes of society, surrounded by luxury, and consuming an excess of animal food. But the fanciful hypothesis of Dr. Prout, so gravely taught, is only another instance added to the many we already possess, of the imperfect vision which afflicts scientific men, when they habitually limit their range to a narrow field, and make their observations from one side only of that. After describing some of the errors of the secondary assimilating processes, Dr. Prout remarks that these are of a much more formidable character than those which depend on derangements of the primary processes. In the latter, the appearance of sugar, oxalic acid, &c. in the urine, is unaccompanied with severe constitutional symptoms, while in the former, similar admixtures with the urine are usually accompanied with marked general symptoms not only, but frequently with visible disorganization of the gelatinous tissues, appearing in the form of carbuncles, cutaneous diseases, &c.

We pass over a section on the composition and properties of the blood, because it contains nothing which may not be found in familiar treatises on organic chemistry, merely reminding our readers that the albuminous principles of this fluid contain azote, that the oleaginous are without this element, and that the saline matters consist chiefly of common salt, with soda in some loose state of combination.

The following is an abstract of the general conclusions of Dr. Prout concerning the functions of the liver and kidneys. 1*st*. The liver is the organ by which the blood is depurated of the unassimilated and superfluous

oleaginous matters, as well as of those portions of blood which are deprived of their azote, of their saccharine constituents, and consequently of their vitality, during the primary assimilating processes. *2nd.* The kidneys are the organs by which the blood is depurated of the unassimilated, superfluous, and effete *albuminous* principles, as well as of the mineral matters incidental to these principles, or which are otherwise derived. *3d.* The neutral *alkalescent* characters of the *bile*, and the oxygenated and *acidulous* characters of the *urine* show that the general character of the actions going on in the liver and the kidneys are directly opposed to each other. *4th.* This opposition is further manifested in that the principles separated by the liver retain some of their vitality for ulterior purposes, while every thing passed from the kidneys is carefully divested of its vitality. These functions are imperfectly performed in disease.

Having thus given an analysis of the elementary portion of Dr. Prout's treatise we proceed to follow out his application of the principles therein contained, to the examination of particular diseases. Although from the title of the work we should expect to find in it descriptions of "stomach disease," there are none such contained in it, Dr. Prout, apparently, not having considered it necessary to inquire whether lesions of the coats of the stomach have any share in producing those derangements of primary assimilation, which, in their turn, induce the more serious disorders of nutrition. The symptomatology of renal diseases receives the fullest consideration. The general division of diseases adopted in the work before us, is into "functional" and "mechanical," under the latter of which are included organic diseases, and yet with the former are ranked "inflammation" and "degeneration" of the kidneys.

The special pathology of the assimilating processes is treated of under four heads, corresponding to the four classes of proximate alimentary principles. The first of these is the aqueous. Upon the quantity of water discharged by the kidneys *cæteris paribus*, depends the specific gravity of the urine. The quantity varies with the season, and its daily average in a healthy person, may be stated at about thirty ounces of sp. gr. 1.025 in the summer, and about forty ounces of sp. gr. 1.015 in the winter. Other circumstances cause the qualities of the urine to vary even in health. Thus after moderate eating and drinking, this fluid is charged with many of the products of primary assimilation; but after fasting, it contains only, or chiefly, those of secondary assimilation. These correspond to *urina sanguinis*, and *urina potûs*, of the old writers. The former, which is best represented by the urine voided on rising in the morning, is very uniform in its properties; the latter, or that which is voided in "the evening after dinner," is subject to much greater variations, both in quantity and quality. Our author points out a number of these variations, and their value in renal semeiology, but we cannot pause to notice them in this place.

The pathology of saccharine assimilation is treated of under the heads of "diabetes," the "oxalic acid diathesis," and the "lactic acid diathesis." Dr. Prout's general view of the rationale of the processes involved is the following. The blood of a healthy person contains no sugar, though that article may have formed a portion of his food. The saccharine principle must, therefore, by virtue of some agency in the stomach be convertible into the constituent principles of the blood. But this power may be suspended or deranged by disease, and the sugar of the chyme be absorbed,

as such, into the general circulation. This sugar may also be *formed* in the stomach, as the first natural step towards the *conversion* of the aliment into albuminous and oleaginous matters. But the converting function being suspended, or paralyzed, the sugar is at once taken up by the blood-vessels, from which it is ultimately excreted through the kidneys. It has, moreover, been recently demonstrated that the stomach of a diabetic patient possesses the faculty of elaborating sugar from substances which in a healthy person are *directly* assimilated; and thus we are enabled to perceive why those affected with diabetes become more and more emaciated in spite of their rigid adherence to a regimen of animal food. The above theory is at the least plausible; and, though defective by not including the first link in the chain of morbid causes, or the physical condition of the stomach producing so considerable a change in the functions of that organ, yet it is luminous, and satisfactory, in comparison with any other "pathology of diabetes" hitherto professed.

In other diseases the function of *conversion* is not suspended, but *erroneously exerted*, so that many principles, some of them of a poisonous character, as, for instance, the oxalic acid, are developed from the saccharine principles, during the assimilating processes. Dr. Prout is of opinion that, besides the oxalic and lactic acids, other unnatural principles appear to be occasionally developed from the saccharine principle, during the processes of assimilation; and this, he thinks, is especially true in the malignant fevers of hot climates, when of a miasmatic and contagious nature, and mentions the acid reaction of the black vomit in yellow fever as illustrative of his remark.

Of the internal causes predisposing to a mal-assimilation of the saccharine principle, Dr. Prout mentions two, namely, inherited predisposition, and all circumstances affecting the general health, and depressing the vital powers. The most frequent external exciting cause is exposure to cold and moisture, excepting, says Dr. Prout, *malaria*. This latter agency, our author thinks, is connected with almost every form of disease in which acids are generated during the assimilating processes. In confirmation of this opinion he cites an interesting observation made by himself about the time when the Asiatic cholera prevailed in England. Previously to that time, he had found the oxalic acid diathesis of rare occurrence in London, but, as soon as the cholera began to prevail, the urine began to give evidence of containing oxalic acid; the saliva, and cutaneous exhalations, were acid; and, a little later, there were more cases of oxalate of lime, renal calculi, and formidable hæmorrhage from the kidneys, than our author had ever before seen, since he began to study urinary diseases. As the cholera disappeared, this state of things gradually subsided. Dr. Prout of course considered the cholera to be malarious. Whatever explanation others may give of the facts here adduced, they are in themselves, highly interesting. That certain articles of food, and deficient or unwholesome diet, will produce the acid diathesis has already been pointed out by other writers. Dr. Prout indulges in a vehement protest against the use of tobacco. He does not doubt that it seriously interferes with the proper assimilation of the saccharine principle, and says that although he has "never been able to trace the development of oxalic acid to the use of tobacco, some equally poisonous principle is probably generated in certain individuals, by its abuse, as is evident from their cachectic looks, and from the dark, and often greenish yellow tint, of their blood." He has "seen

cases of dyspepsia, produced by snuff taking, terminate in malignant disease of the liver and stomach," and mentions, with some indication of belief, that "great smokers who employ short pipes, and segars, are said to be liable to cancerous affections of the lips."

It would have been well for our author to have examined the facts of the case before hazarding an opinion which may excite the astonishment of many readers of his work. Such facts as the following would perhaps have thrown some light upon the subject; the Irish and Germans use the pipe habitually, the latter constantly; the Americans and West Indians smoke segars; the French consume large quantities of snuff; is, then, cancer of the lip more common amongst the former nations, and "malignant disease of the stomach" more prevalent in the last? Such an examination as this would have furnished something more tangible than a second-hand hypothesis.

To prevent confusion, Dr. Prout recommends that the term "Diabetes" be confined to the disease of which a *saccharine state of the urine* is the characteristic symptom. This state is, however, generally accompanied by diuresis. The invasion of the disease being gradual, a difficulty is often experienced by physicians in determining the date of its commencement. Dr. Prout thinks that by inquiring minutely when the urine *was last observed to be turbid*, he has several times traced attacks very nearly to their origin. In such instances patients have usually stated that at some former period the continued turbidness of the urine attracted their notice, and that they referred it to exposure to cold, or to an attack of gout, or rheumatism, &c. Now, our author considers it probable, that about the time the urine grew clear, its saccharine qualities became developed, or at least, confirmed, although at this period the diuresis did not exist, and did not attract attention by its quantity, for several weeks, or months, afterwards.

A full and very distinct account of the symptoms of this disease is given in the work before us; they are already familiar to our readers, and need not detain us. The terminations of diabetes are very various, but Dr. Prout thinks that phthisis is the most common amongst them.

Among the *causes* of diabetes Dr. Prout appears inclined to rank cutaneous affections, upon the ground that these often *precede* the alteration of the urine, and disappear as soon as that is established. He has also remarked that affections of the cellular tissue, such as carbuncles, and malignant boils, *accompany* the formation of saccharine urine, so frequently, indeed, that in every case of these cellular inflammations observed by him, he has found diabetic urine.

Of the treatment, Dr. Prout remarks, that we must have regard to the quantity, as well as to the saccharine condition of the urine, and that inattention to this precept has caused many agents to be vaunted as cures for the disease, which, in reality, could only affect the diuresis. He looks upon a regulated diet as the principal resource, and while he admits the necessity of a diet principally animal, he would still combine with it a certain proportion of farinaceous matters. The reason for such a recommendation is that the saccharine principle continues to be assimilated as long as the stomach performs any of its functions. Of the farinaceous substances, the best adapted to the present object, are the *high*, or *strong*, such as the farina of wheat, in the shape of unfermented bread, biscuits, &c. Every variety of sugar in its crystallizable forms is inadmissible,

including all fruits. A precept of universal application, but which has a peculiar appropriateness in relation to this subject, is, that "it is easier to abstain than to be abstemious," and we question very much the prudence of giving to a subject of saccharine disease even a qualified permission to use farinacious articles of food. Besides the craving for variety natural to a person restricted to a single and unvarying dish, there must be always, in such cases, a hankering after that which is forbidden, merely because it is so; and the least indulgence of appetite must therefore be dangerous to a diabetic patient, to whom, emphatically, "stolen bread is sweet."

Dr. Prout insists strongly on moderation in the use of food; and to ensure it, as far as possible, recommends that the repasts be taken at regular periods of four, five, or six hours, and that, for an hour or two after eating solid food, fluids should be abstained from as much as possible, and, that when used these should be tepid. We are obliged, by want of room, to pass without notice some very judicious remarks upon two classes of cases; namely, those in which the dissolving power of the stomach is morbidly active, and those in which it is feeble. Of the proper medicinal treatment of diabetes, Dr. Prout has little to add to what has been said by other writers upon the same subject. He passes in review a variety of remedies; denies the existence of any specific for the disease; recommends leeching to the epigastrium, in acute cases, as if he caught a glimpse of something more than a chemico-vital derangement there; prohibits saline purgatives because of their diuretic influence; favours the use of diaphoretics on account of the habitual dryness of the skin; refuses to opium any real influence upon the saccharine state of the urine, affirming that it merely controls the diuresis; thinks favourably of the ferruginous preparations, and especially of the phosphate of iron; but concludes with professing his ignorance of any agent capable of controlling the essential symptom of the disease.

Our author directs his reader's attention to the *complications* of diabetes, which, he says, usually exist in the early stages of the affection, and consist chiefly of "hepatic disorder or disease." This phrase, he says, "naturally introduces the subject of *mercury*." By which he means that the greater number of physicians never meet with derangement of the liver, without thinking of mercury, and, indeed, rarely without using it. A certain off-hand success with this agent in many biliary derangements induces too many practitioners to resort to it without due regard to the remote consequences of its administration. Dr. Prout insists, that "*when it has no real disease to combat, mercury is liable to give occasion to disease*," that the use often leads to the abuse of it, because the liver, accustomed to the stimulus of mercury, will hardly respond to any other influence; that a "large proportion of the most inveterate dyspeptic and urinary diseases" which he has observed, "have been distinctly referable to the abuse of mercury;" and that he has never seen mercury do good in diabetic disease, but, on the contrary, almost invariably do mischief. Some interesting remarks on diabetic diuresis as it occurs in young children conclude the present chapter.

The oxalic acid diathesis is treated of by our author chiefly in reference to those diseases which are accompanied with the formation of oxalate of lime calculi. The presence of this acid in the system to a considerable extent, is generally shown by the transparency of the urine and the absence of sediments in it, by its being of a pale citron-yellow, or

greenish hue, and of moderate specific gravity. But these signs are not conclusive; for the urine of healthy individuals may, from accidental causes, occasionally assume appearances like those stated. In such cases we must be guided by the general symptoms, and these belong to the irritable or nervous class, rather than to the congestive or inflammatory. They are well described in Dr. Christison's essay upon gravel in the "Library of Practical Medicine." They have no very peculiar significance, for "flatulence and irregular action of the heart" are the most frequent amongst them. Hæmorrhage from the kidneys has long been considered as indicative of oxalate of lime calculus, and has been attributed to the mechanical action of the rough surface of this form of stone. Dr. Prout is of opinion that "the chief cause probably lies in the nature of the diathesis," and supports his theory by referring to the observations made by him during the cholera, (which have been already detailed,) and with the additional remark, that all the symptoms, including the hæmorrhage, sometimes existed, without being accompanied or followed by the passage of renal calculi. Of the exciting causes of the oxalic acid diathesis, the most prominent, according to Dr. Prout, is malaria. He enumerates many others besides. The proximate causes are regarded to be the non-assimilation of oxalic acid taken as food, and the mal-assimilation of saccharine aliments.

The appropriate diet in this disease, is nearly the same as that recommended in diabetes. But in the former, the tone of the stomach is apt to be impaired; in which case, our author says that "French cookery, by which animal and other matters are reduced to a semifluid or pultaceous mass, often agrees better than the crude and solid chops and steaks" of the English *cuisine*. Dr. Prout's experience must have been unfortunate in the matter of "French cookery," since he describes its achievements in terms so uninviting, and so redolent of the laboratory. The purest, even distilled water, should always be preferred as a drink; but where previous habits require the use of a stronger beverage, a little sound porter, or dry sherry, may be cautiously taken; but weak brandy and water is preferable to most wines. The mineral acids, alone, or combined with mineral tonics, may be taken with advantage, but must be suspended as often as they produce a deposition of the lithate of ammonia, or of lithic acid in the urine. In this way the diathesis is sometimes gradually subdued, and at length removed altogether.

The *muriatic and lactic acids* "are always present in the stomach during the reducing process, and their presence appears to be necessary to the accomplishment of that process." This opinion of Dr. Prout is not in strict accordance with that already quoted, and which considers the lactic acid as usually the product of a deranged function. However, this may be, both of the acids are sometimes present abnormally; the muriatic being generally in excess in the dyspepsia of persons inclined to a bilious temperament, and the lactic in that of nervous and feeble persons. The bile, it has already been intimated, is sufficient to neutralize the free muriatic acid which passes from the stomach to the duodenum during healthy digestion; but when lactic acid is generated in excess, there is nothing, according to Dr. Prout, to neutralize it; wherefore it either passes into the lower bowels, or is taken up by the lacteals, giving rise to numerous secondary symptoms. "Excessive acidity of the cœcum is generally accompanied by a deficient secretion of bile, apparently from spasmodic

stricture of the common gall duct; or it may be, of the biliary ducts themselves," &c. &c. Several pages of such opinions and reasoning follow. We pass them by without other comment than the expression of profound regret that one whose life has been devoted, and with such remarkable success, to experimental science, should indulge in fictions of so injurious a tendency; for they were written not to amuse, but to instruct; they were meant to be used not as the pastime of an idle hour, but as guides to those who are entrusted with the lives and happiness of their fellow men. Some really practical remarks made by our author upon the treatment of these acid derangements, are nevertheless deserving of remembrance. The acid residua of a meal should be neutralized when the digestive processes are completed; that is, from three to six hours after the meal has been taken, and for this purpose from ten to thirty grains of carbonate of potash, with four or five grains of nitre, will be sufficient. The use of this remedy must be persevered in until the tendency to form an excess of acid is cured by diet and other means; for let it be bore in mind, that *alkaline remedies have no effect in preventing acidity, but only in neutralizing the acids already formed.* When there is reason to believe that there is much acidity in the lower bowels, an enema of soap and water is the appropriate remedy. Of *bilious attacks*, Dr. Prout says, "these derangements are not half so well understood as they are supposed to be; and there is no class of diseases, particularly as they occur about the middle or stationary period of life, requiring greater discrimination or judgment on the part of the medical practitioner, on whose mode of treatment very often depends not only the future comfort, but sometimes even the very existence of the patient." We commend this excellent remark to our *proneurs* of blue pill.

The pathology of albuminous assimilation and secretion is next considered under the following heads; viz. (*a*) derangements accompanied by the presence in the urine of an excess or deficiency of urea; (*b*) of albuminous matters; (*c*) of lithic acid and its compounds; (*d*) and of cystic oxide.

An excess of urea may or may not be accompanied by diuresis. The principal symptoms of this, as well as of nearly all the alterations in the normal condition of the urine, are so nearly alike, that we cannot hope to present a complete picture of them in a notice like the present, but must beg our readers to look for them in the original work. An excess of urea is rare. Dr. Prout thinks that its source in the economy is the gelatinous tissues. A deficiency of urea is most common in hysteria.

Of Albuminous Urine. This subject is considered under the heads of chylo-serous, and serous urine; the two varieties gradually running into each other, so that no well marked line of distinction can be drawn between them. Chylo-serous urine, when first voided, is always more or less white and opaque, and usually coagulates spontaneously. The constitutional symptoms are not very severe. The disease itself is not common in England, for Dr. Prout has only seen thirteen cases of it. It is not necessarily connected with organic disease of the kidney. Its predisposing and exciting causes are but little understood. The proximate cause, according to our author, lies partly in the assimilating organs and partly in the kidneys. The chyle is not raised to the blood-standard, and being therefore excrementitious, must be rejected from the economy through the kidneys. But these organs instead of reducing it to a crystallizable state, that is, into the lithate of ammonia, permit it to pass through them un-

changed. On the other hand, as a proof that the kidneys are themselves sometimes affected, it may be mentioned that Dr. Prout has often found chyle in the blood, when there was no trace of albuminous matter in the urine. No particular plan of treatment seems to have much influence on the disease, which, it should be known, occasionally disappears of its own accord, for years, and then again recurs, without any apparent cause. A case of twenty years duration is mentioned by Dr. Prout.

Serous urine may be excreted by the kidney in a state of health, or of "degeneration;" and the organ may in both these states, be quiescent merely, or become inflamed. This naturally gives rise to four divisions of the subject, of which the first concerns the healthy kidney in a quiescent state. Albuminous matter is never found in the urine in health. But if, as in the case of chylo-serous urine, the albuminous matters of the blood are not changed into lithate of ammonia (or *disorganized*) on being subjected to the action of the kidneys, they will be excreted with the urine, and found in it possessing their peculiar qualities. Dr. Prout does not believe that this occurs, without a condition of the kidneys "to which, for want of a better name," he applies the "epithet *inflammatory*," or without other parts of the system are more or less involved in a similar condition. This peculiar condition may be produced temporarily by mercury, cantharides, &c.; may follow attacks of fever; may accompany pregnancy; or be caused by indigestible food, or mental excitement.

The serous urine, accompanied by *acute inflammation of the healthy kidney*, is generally transparent when passed, but becomes opaque and turbid on cooling. Its colour is unusually deep, and its specific gravity high (from 1.018 to 1.030), in quantity it is less than usual; at the outset of the disease it is sometimes without sediment, which when it does occur, is usually of a deep brownish colour, and consists of lithate of ammonia. The application of heat renders the urine opaque. This disease, formerly called inflammatory dropsy, is now more generally known as "Bright's, disease." The symptoms of invasion are inflammatory, but their intensity is not, our author thinks, derived from the inflamed condition of the kidneys alone, since acute nephritis produces "a very different train of symptoms." The anasarca which frequently follows scarlatina, is nearly allied to this disease. In the treatment of inflammatory anasarca, active antiphlogistic measures are absolutely necessary, and the extent to which they are employed should be regulated in the usual manner, by the appearance of the blood drawn from a vein. After describing other familiar remedial measures, our author says, that, "when the patient has been fortunate enough to recover from the immediate attack, it will be absolutely necessary for him, for a long time, perhaps during the remainder of his life, to consider himself an invalid; to live abstemiously and carefully; to take regular and moderate exercise; and, above all things, to avoid exposure to cold and wet."

The section on "serous urine, the kidney being in a state of *degeneration*," is prefaced with some remarks on inflammation and degeneration. The latter of these terms is described as including "those slow and indefinable changes occurring in all living structures, from the gradual decay of the vital processes in general;" and in this sense is spoken of as a *cause* of organic disease. This process is the natural consequence of age, but may be an acquired weakness, at any time of life. The terms acute, chronic, and congestive inflammation, are not here used in their ordinary

acceptation. The first is restricted to inflammation in healthy structure; the second to "degenerated" structures; the third is said to be a consequence of either of the other two. If we understand Dr. Prout, he differs from other writers merely, in that *they* consider chronic inflammation of the kidneys as always following the acute form, while *he* maintains that it is often preceded or accompanied by "indefinable" degeneration; and further, in that while *they* look upon the quiescent state of the kidneys preceding the last acute attack as a state of chronic inflammation, *he* prefers to designate the same condition by the "indefinable" epithet "structural degeneration." It might be well to adjudge this dispute, if only the two parties could be brought to the bar: chronic inflammation answers, indeed, to the call; but as for the other party in interest, it is not forthcoming, and is found at last to have no representative but its name: *vox et præterea nihil.* Dr. Prout speaks very lightly of the post-mortem descriptions of pathologists, characterizing the contents of their works as "an unphilosophical jumble," and objecting to their deductions from pathological anatomy, because it could not enable them to "distinguish what was due to degeneration and what to inflammation." Dr. Prout has hardly a right to blame them for not perceiving what is "due" to an hypothesis entirely his own. But we owe it to Dr. Prout to state his own explanation of the degenerating processes. They may be due, either to *anæmotrophy* or to *hæmotrophy*, which mean, respectively, deficiency and excess of sanguineous nourishment. These conditions are, he thinks, naturally determined by the age of the patient. Thus, before the age of forty, there is no natural reason why the kidneys of a perfectly healthy individual, who has lived regularly, should suffer degeneration; but about that age, long continued habits unfavourable to health, such as the daily use of wine, and a stimulating diet, may induce or accelerate a change in the kidneys. The evidence of this change, then or at any other period of life, is not, as we might infer from its being made the basis of a classification by our author, a thing demonstrated or demonstrable by actual inspection of the deranged organs, but the alteration is *assumed* and nothing more, to account for the presence of albuminous matter in the urine.

Following the division here suggested, we have, 1st, serous urine, the kidney being in a state of anæmotrophy, and quiescent. The incipient symptom of this condition is, that the characteristic serous property of the urine is not *always* present. The colour of the urine is sometimes paler, and sometimes of a deeper colour than natural; often more acid than in health, and in that case depositing a pale or bright pink coloured sediment; it is also variable in quantity. The constitutional symptoms offer nothing peculiar. When the affection becomes confirmed, the urine is permanently serous, and becomes turbid on the application of heat or nitric acid; its quantity is generally above the natural standard; and it is deficient in the lithates, and in urea and saline matters. In the very last stages the urine is scanty, and this state usually ushers in a fatal coma. The constitutional symptoms do not differ from those of chronic renal disease in general, but are of an aggravated form. Our author quotes from Dr. Christison a list of the principal concomitant diseases, which are among the most formidable to which humanity is liable. Between most of them and the renal disorder there seems no other bond of union than that which the last named writer describes by saying, that diseases of the kidney "seem to engender an infirmity of constitution which renders the

body prone to disease in general." The children "of old drunkards and debauchees who have died of renal affections," are thought by our author to be predisposed to kidney disease. A stricture of the urethra is, in such persons, likely to arise from a slight gonorrhœa, and to lead to disorganization of the whole urinary system. Besides the general exciting causes of renal disease, this and kindred varieties are chiefly owing to "the abuse of ardent spirits," and in a less degree to venereal affections, and to the improper treatment of these latter.

The next division relates to serous urine "when the kidneys are in a state of hæmotrophy, and quiescent." This disease is most frequent about the age of forty, or subsequently thereto. In it the colour of the urine is usually natural, sometimes deeper than natural. It is almost uniformly acid; when passed is transparent, but often becomes opaque on cooling, depositing a dirty sediment, and does not become clear again without subjection to a gentle heat. At a temperature of 130° or 140° it grows turbid again by coagulation of its albuminous matters. Before the middle period of life, renal affections are most commonly connected with dyspeptic derangements, especially of the stomach, but after that period the liver and bowels are more usually disordered. When the disease has become confirmed it is very apt to pass into granular degeneration. The remarks upon "causes" and general "diagnosis" we pass by as containing nothing very tangible, or of practical value; but gladly dwell for a moment upon the answers given by Dr. Prout to two questions:—first, how far diseases of the kidneys are entirely removable? and then, if not removable, how far are they compatible with life? To the first of these our author replies, that in the very early stages, the disorder appears to be chiefly functional, and *therefore* removable. Indeed, if any thing can be inferred from the state of the urine, as far as the presence of albuminous matters is concerned, even the more advanced stages of the affection are occasionally so far removed, as to be hardly distinguishable by the urine. In regard to the second point, it may be remarked, that in renal diseases there is a constant risk from the disposition to inflammatory action, which, therefore, should be combatted when ever it manifests itself. If, then, this precept be obeyed, excitement of mind and body avoided, ardent spirits abstained from, &c., Dr. Prout is "decidedly of opinion, that a very large proportion of those who labour under renal affections may live for many years, and enjoy tolerable health—indeed better health, and more comfort, than are compatible with many other chronic and incurable diseases."

The treatment must be varied according to the age and circumstances of the patient. In early life the dyspeptic symptoms already alluded to, are singularly obstinate, and frequently baffle the practitioner. The three great points are attention to diet and regimen; the guarding against the influence of cold and moisture; and the avoiding all violent remedies. Flannel should be worn next the skin throughout the year; exercise should never induce fatigue, and should be taken under circumstances adapted to give occupation and to amuse, as in travelling by sea and land. By *violent* remedies are meant, the abuse of mercury, and of stimulating articles, such as the terebinthine diuretics.

If purgatives are necessary, castor oil is the best, if the stomach can tolerate it; rhubarb renders the urine irritating; to correct nausea, acidity, and flatulence, hydrocyanic acid is recommended, either alone, or associated with small doses of the fixed alkalies. When the kidneys and

bladder are unusually irritable, the uva ursi, conjoined with hyoscyamus, hop, &c. is often useful. When incipient nephritic degeneration occurs in advanced life, and is accompanied with signs of congestion in the head, liver, or chest, blood-letting, with a judicious use of mercurials, and the more active diuretics, are indicated. If there be a tendency to gout, resort may be had to alterative doses of mercury, with colchicum, and, associated with these, mild purgatives of the saline class. The diet should be light and moderate; when the active symptoms have abated, carbonated waters may be used to promote diuresis; and a little sound sherry or hock taken, if the patient be habituated to the use of wine. If this plan seems beneficial, it should be pursued until the urine has acquired its natural appearance and transparency, when it will often be found to have lost its albuminous character. In the confirmed and advanced stages, the same rules should be observed, and, in addition, fatiguing exercise, especially on horseback, carefully avoided. Riding on horseback is then very apt to cause bloody urine, or a tendency to the suppression of this excretion. The medicinal agents most likely to do good are diaphoretics, amongst which our author mentions favourably, citrate of ammonia, associated with an opiate, or with Dover's powder. He also recommends a seton in the loins. In conclusion he deprecates the *nimia diligentia medici;* the itch which doctors have to prescribe most, where least benefit is possible; and to make the unhappy victim of an incurable disease doubly wretched, by perpetually renewing for him the demonstration of the inefficacy of art. The judicious physician will, in a case of confirmed renal disease, know how to withhold his hand, and yet be ready to act promptly and with vigour, when inflammatory or other urgent symptoms arise.

The connection of an inflammatory state of the "degenerated kidney," with serous urine, is next examined. But as this affection has been amply described by Bright, Rayer, and others, from whom, indeed, Dr. Prout draws his most important remarks, we pass to the following section, which treats of "lithic acid." This acid exists in the healthy urine in such a state of combination, and in such proportion, as to be held in solution at all ordinary temperatures. But in certain conditions of the urine the lithic acid is precipitated, a phenomenon easily imitated by adding a few drops of any acid to healthy urine. The sediment thrown down may assume the form either of an amorphous impalpable powder, or of crystallized and massive concretions. The former may be yellow, and consist of lithate of ammonia tinged with the colouring matter of the urine; or red, by addition of the purpurate of ammonia; or pink, by admixture of both of the above salts, with little or none of the colouring matter of the urine. The first of these varieties belongs to the ordinary state of health; the second to febrile affections; and the third, to chronic visceral affections, especially of the liver and spleen. The crystallized sediments consist of lithic acid, nearly pure, and assume the forms of sand or gravel, amorphous concretions, and pisiform concretions. Amorphous sediments and crystallized gravel occur in early life; renal and vesical calculi of lithic acid in the amorphous concrete form, prevail in middle life; and, in a more advanced age, there is a tendency to form numerous small concretions around minute nuclei.

Dr. Prout considers an inherited predisposition to be among the remote causes of lithic acid derangements, and to this he adds the "strumous diathesis, especially when associated with gout." The exciting causes may be classed under three heads; *diet*, *exercise*, and *atmospheric influences*.

An excess of food, particularly of animal food; certain articles indigestible by almost all human stomachs, such as "hard-boiled fat dumplings;" vinous or alcoholic drinks which are at once strong, sweet, and acescent; and "hard water," are among the most fertile causes of lithic acid deposits arising from errors of diet. Although riding on horseback, and other violent exercises affecting the dorsal system, may be ranked among the causes of the disease in question, yet bodily inactivity, conjoined with a full or improper diet, will be almost certain of inducing, sooner or later, either urinary deposits or gout. Cold and moisture tend to produce this as well as the other forms of renal disease.

The following view is taken by Dr. Prout of the *proximate* causes of lithic acid deposits. They are supposed to be derived principally from the albuminous principles. These latter when contained in excess in the alimentary matters are not assimilated, but are separated from the blood by the healthy kidneys under the form of lithate of ammonia. During feverish derangements this salt is probably derived also from the deranged secondary assimilation of the albuminous textures. The massive forms of lithic acid deposits, it is stated, are derived from the same sources as the above; but when thus deposited, the lithic acid is secreted either in connection with acids, which, combining with the ammonia of the lithates, set the lithic acid free; or in connection with other bases, as soda, &c., the compounds of lithic acid with which are less soluble than the lithate of ammonia.

The treatment of a case in which the yellow amorphous sediment is the habitual deposit, should consist chiefly in the regulation of the diet. In this an error of quantity is of infinitely more consequence than an error of quality, for, according to Dr. Prout, "any stomach may digest a *little* of any thing, but no stomach can digest a *great deal* of any thing." The febrile symptoms connected with the red and pink sediments of course require a treatment specially adapted to them. The question of "animal or vegetable diet" is discussed by Dr. Prout, who is of opinion that the truth in this matter lies between the two extremes, and that a mixed diet, due regard being had to quantity, is the best. Persons used to brandied wines are almost sure to bring on pains in the back, and gravel, by the occasional use of weak, acescent, wines; while individuals who have been accustomed all their lives to drink weak wines, cider, or perry, rarely suffer from gravel. Malt liquours operate unfavourably. Of the diluents, tea is best; and coffee, chocolate, &c. should be shunned altogether. Milk, from the sugar it contains, is not safe, if taken in large quantities. The use of alkalies should be governed by the rules already laid down. When they are given in combination with tonics, the good effects of both are lost; but the administration of tonics before meals, and of alkalies after them, is often productive of the best effect. The solvent influence of alkalies upon lithic acid concretions is not admitted by Dr. Prout; but he recommends that it should be sought for, if at all, in the use of those mineral waters which are naturally alkaline. Some individuals are intolerant of alkalies; one case is mentioned by our author, of a gentleman, in whom they produced an excitement bordering on delirium. These remedies should be exhibited in small doses, or else they will not only derange the assimilating functions, but also produce serious disorder of the nervous system.

A section, in the volume before us, is devoted to the history of cystic

oxide calculus. This disease is, however, extremely rare, and need not occupy us further, at present.

The pathology of oleaginous assimilation and secretion, (of which, it is confessed by Dr. Prout, we know much less than we ought to know,) is treated of under the heads of *obesity*, *leanness*, and certain derangements in the qualities of the oleaginous principle, of which the production of *gall-stones* is an example. Obesity is very frequently inherited, as the most trivial observation proves: it is more common in moist and temperate, than in cold or in hot climates; but is rapidly induced by high feeding, heat, indolence, and want of thought, united. Dr. Prout cites familiar illustrations of this, and alludes to the method of fattening animals artificially, especially that of preparing geese for the manufacture of *patés de foie gras*. The livers of these unfortunate birds are not only hypertrophied by the process, but, according to our author, rendered *poisonous*. "It is probable," he says, "that in this and many similar instances the poor animals sometimes have theirr evenge. Indolent and dyspeptic individuals who partake of these diseased and poisonous productions can scarcely be supposed in all instances to assimilate them; and consequently run considerable risk of inoculating and converting their own livers or other organs into a similar mass of disease." *Leanness* must not be confounded with *emaciation;* it implies a simple absence of fat. It may result from the absolute deficiency of nutritive matter in the food, or from an accidental or natural inability to assimilate the oleaginous principle. Dr. Prout points out as one of the purposes which fat serves in the animal frame, that, during fevers and other diseases, prolonged abstinence from food is unattended with serious consequences, owing to the appropriation of the fatty tissues by the economy. Although the greater part of the adipose matter of the body has but few of the characters of a living organized substance, yet it exists in a highly organized state in the nervous and cerebral tissues, one fourth of whose solid parts is said to be oleaginous.

In the section on "cholesterine and its deposits" we find it stated, that these latter arise from, or are connected with, imperfect assimilation of the oleaginous principle, a retarded or sluggish action of the liver produced or aggravated by a full diet, by muscular inactivity, and too much sleep, with certain degrees of malarious influence in some instances. Biliary concretions are more common in females than in males. Their formation seems to depend on the separation in a solid form, of cholesterine, which exists in solution in the healthy bile. The precise mode of this separation is unknown.

The fifth chapter is devoted to the pathology of the incidental matters of organized products; these are either insoluble, as the triple phosphate of magnesia and ammonia, and the phosphate of lime; or soluble, as soda, potash, and ammonia. Hence two classes of diseases, according as the urine contains the insoluble or the soluble compounds. The triple phosphate is usually deposited as white, shining crystals, called *white gravel;* the urine containing it is usually pale, and slightly acescent when passed, but on standing, there forms upon its surface a pellicle, consisting of the salt in question. Amongst the causes of this disease are those which tend to produce nervous derangement, of which, indeed, the most prominent symptoms of phosphatic disease are only modifications. Perhaps imaginative minds may find some explanation of this in what Dr. Prout says of the proximate cause of the affection. "That the deposition of this salt,"

he remarks, "is connected with the inordinate consumption or mal-assimilation of some tissue intimately connected (I do not say *identical*) with the organic system of nerves, is evident from all its pathological relations, and more especially from its extraordinary development during excessive activity, not of growing and increasing, but of common and necessary organic operations. When the triple phosphate is deposited in large quantity, the material of this tissue (probably in a modified form) is often likewise present in the urine in large quantity." The phosphate of lime is thought by our author to be eliminated from parts having "more relation to the dermoid variety of the gelatinous tissues." The symptoms accompanying its development are of the same sort as those last noticed. In general the two insoluble salts above described are mingled in the earthy deposits of the urine, their relative proportions being varied in every possible grade.

An excess of the mixed phosphates in the urine is not commonly, says Dr. Prout, an idiopathic disease; it usually accompanies protracted affections of the bladder and prostate, and is often caused by the presence of stone in the bladder. From this it must be inferred that the urine is not phosphatic before reaching the bladder, but that it becomes so during its sojourn in that reservoir. Among the exciting causes of this disease are prominently ranked, injuries of the back, by concussions, blows, or other accidents, such as a fall from a horse. The constitutional symptoms are usually severe, and one of them is a "sensation of uneasiness, weakness, or pain in the back and loins." These symptoms certainly point to the kidneys as a source of the urinary derangement.

The diseases connected with the *soluble* incidental matters in the urine, including soda, potash, and ammonia, are next considered. The urine, in most of these diseases, is alkalescent when passed; its odour ammoniacal, urinous, and offensive; its colour pale or reddish; its transparency affected by the presence of pus or mucus; the quantity of earthy phosphates below the healthy standard; the urea deficient; the soluble alkalies, in combination with carbonic acid, are in excess; and a large proportion of lithate of ammonia and soda is often present. The symptoms of these affections are like those accompanying an excess of phosphates in the urine; their causes also have the same analogy. The prognosis must be generally unfavourable, on account of the deep-seated and constitutional nature of these derangements.

The treatment must vary according to the particular complications in each case; yet certain general rules may be laid down. It has been urged by chemico-medical theorists, that as the diseases under consideration are accompanied by an alkalescent or rather ammoniacal condition of the urine, a diet of vegetables, or one as free as possible from azote, should be adopted in their treatment. But experience in this case, as in many others, contradicts the conclusions of those men of science, who can see in the living organism little more than a collection of retorts and galvanic series. Vegetable diet *ought to be* the best, but *is* the worst diet in these affections; a course of generous animal food agrees by far the best with the patient. The Rhenish wines in winter, and the lighter French wines, or sound cider, or perry, in summer, are well suited to those individuals who have been used to drink wine. Indeed, fluids containing the malic acid seem to possess peculiar powers in arresting the depositions of the phosphates in some individuals. "Whatever fatigues or exhausts,

either bodily or mentally, will do mischief. Hence, absence from care, the exhilarating air of the country, and such occupations as are consistent with the patient's peculiar condition, will, perhaps, more than any thing else, contribute to the cure; particularly in those slighter and induced cases, in which the affection is not complicated with local injury." The nervous state of the system usually attending a marked deposition of the phosphates and carbonated alkalies, indicates the use of sedatives and tonics. Of the former, henbane, camphor, and opium; and of the latter, bitter diuretic decoctions and infusions, and the acidulated infusion of roses, are recommended. Dr. Prout, as we have seen, considers a deposition of the mixed phosphates to be very "unusual as an idiopathic affection," and publishes three exceptional cases as illustrative of such idiopathic deposition, &c. Of these we propose to take a passing notice. The first is the case of a gentleman who, nineteen years before, got a *fall upon his back*, which particularly affected the left side, about the region of the loins. He was three months on crutches, and every spring or summer thereafter suffered with pain in his loins. When consulting Dr. Prout he had severe enervating pains in the loins, extending round to the groin, and lower part of the abdomen. Emaciation was advancing rapidly, and there was diarrhœa. This patient recovered by using castor oil, and pills of soap and opium, with a pitch plaster to his loins: at all events, no further treatment is recorded. The second case is of a clergyman, who consulted Dr. Prout "respecting a train of very distressing symptoms, some of which evidently denoted considerable *disease of the kidneys*." Besides which, observes Dr. P. "there *appeared to me* to exist important disease of the chylopoietic viscera." And this is the substance of all we have about the case. Truly we can unite with Dr. Prout when he says, of this case, "it is to be regretted that we know so little about it, particularly its cause." The third case is of an individual, "who had for several years laboured under stricture of the urethra." He had consulted a surgeon and obtained much relief; and was in the habit of occasionally introducing a bougie himself; latterly the irritation had increased, and the urine of the patient contained carbonate of lime, mixed with a small portion of the earthy phosphates. "That this carbonate of lime was from the irritated surface of the bladder and urethra, there can be no doubt." In the first and third cases our author assigns physical and local causes for the disease; and in the second, while regretting his ignorance of its cause, emphatically states that there *was serious disease of the kidneys*. In the face of these facts we are told that the deposition of the phosphate is sometimes an *idiopathic* affection; nay, more; these facts are relied upon to prove that in the cases cited the affection *was idiopathic*. We sincerely hope that the foundation upon which the elaborate work before us is supported, is composed of materials more solid and better adapted to their important purpose. Our author, we have seen, complains of "the unphilosophical jumble" of pathological anatomists; he should not have blamed a fault in their works, which is so conspicuous in his own.

The second book treats of mechanical diseases, including those arising from obvious lesions of the kidney and bladder, and particularly from the presence of concretions in these organs. The subjects embraced by this division, it will be perceived, are amongst those with which we have been made acquainted by various medical and surgical writers, especially by MM. Rayer and Civiale. Our notice of them need not, therefore, be as

full as that we have given of the first and third parts of Dr. Prout's work, although they are, for all practical purposes, of a far more attractive class.

The hypothesis of our author concerning the mode of formation of the several varieties of renal concretions, need not detain us. The symptoms of their presence in the kidneys are pain in the loins; nausea and vomiting; retraction of the testes, and bloody urine; all of which vary exceedingly in different cases. The size of the renal concretion is not a measure of the severity of the symptoms produced by it; an individual may pass the greater part of a long life with a very large concretion in one kidney at least (sometimes even in both) without being a remarkable sufferer. The nature of the concretion may be conjectured from the fragments previously passed, and from the prevalent characters of the diathesis, as indicated by the urine. Upon the subject of treatment there is nothing new.

The second chapter relates to those diseases produced by, and liable to be confounded, or associated with calculus in the kidneys. The most prominent of these are acute and chronic inflammation.

The acute idiopathic form, Dr. Prout declares to be very rare in England; for he has "only seen two or three well marked instances, and is not able to speak with much precision of more than one case." In this opinion our author differs from Dr. Christison, who seems inclined to admit the numerous distinct divisions of M. Rayer, because they are founded upon actual inspection of the diseased organs taken together with the symptoms fairly referable to them. But of this sort of demonstration Dr. Prout does not appear to admit the force. He, nevertheless, enumerates the causes assigned by other writers, of which the most frequent are a gouty or rheumatic predisposition, and exposure to cold.

Pyelitis, or inflammation of the pelvis of the kidney, receives a brief notice from our author. It is most frequently caused by the presence of renal concretions; but it is sometimes connected "with certain cutaneous affections remotely allied to syphilis, or the oxalic acid diathesis."

Under the head of "diagnosis" some very interesting remarks are made respecting "pains in the back." These and other anomalous sensations in the same part are often complained of by patients, who are thus led to apprehend that stone or some worse affection exists in the kidneys. Many of these pains are merely "symptomatic," or muscular, and others it is not easy to explain. The following passage contains the most important details upon this subject.

"When there is acute pain of recent origin in the region of the kidneys, increased by pressure, and accompanied by severe symptomatic fever and derangement of the stomach, with scanty, high coloured, and acid urine, there is reason to suspect the presence of inflammatory action either in the kidneys or their immediate neighbourhood. When in conjunction with more or less of the above symptoms, the pain extends downwards and forwards towards the groin, and is accompanied by retraction of the testicle, and numbness in the thigh of the same side, with pain or tenderness just above the pubes, and bloody urine; there is reason to suspect the presence of calculus in the kidney or ureter. If the patient has never passed gravel of any sort; if he be subject more especially to irritable stomachic dyspepsia, accompanied by much flatulence and irregular action of the heart; if he labour under eruptions of the scaly kind, or troublesome, indolent boils; if the urine be generally transparent and of a citron tint, rather copious, and not remarkably acid, there is reason to suspect that the calculus is of the mulberry variety. If in conjunction with the usual symptoms of renal calculus the urine be found to contain the cystic oxide, the calculus will probably contain this substance. Lastly, if the constitutional irritation be unusually urgent, and the pain of a burning character; if the patient labour under cutaneous disease

about the scrotum or its neighbourhood; if the urine be pale coloured, alkalescent, and abounding in the phosphates, the calculus will be most probably found to consist chiefly of the phosphate of lime."

In the treatment of nephritis in its acute form, general and local bleeding are insisted upon; the warm bath and active doses of calomel conjoined with opium, henbane, colchicum, &c., according to the severity of the symptoms; mustard cataplasms to the feet in gouty subjects; blisters after the disease has begun to yield; large emollient clysters, with or without opium; an antiphlogistic regimen; and when the functions of the kidneys begin to return, a free use of warm mucilaginous drinks; these constitute the principal means of treating simple inflammation of the kidneys. The reader is referred to M. Rayer's work for a full account of this subject.

The length which this article has already reached, obliges us unwillingly to pass without notice the chapter on the origin, increase, and treatment, of vesical calculi. The following chapter treats of diseases of the bladder and its appendages, produced by and liable to be confounded or complicated with vesical calculi. It is worthy of note, that chronic inflammation of the bladder usually precedes, instead of following the acute form, which is comparatively rare. Idiopathic catarrh of the bladder "is said to commence" suddenly, with oppression at the stomach, and relaxation of the bowels: there are occasional sharp pains, with a sense of heat in the region of the bladder, and of weight in the perineum. Later there is a constant desire to urinate, with spasm of the bladder and urethra, and a discharge of mucus; slow fever attends, and feebleness and emaciation succeed. The discharged mucus is generally tenacious, and either neutral or alkaline, while the urine itself is acid. The mucus secreted, sometimes amounts to several pints in the day, and in the advanced stages of the disease, assumes a puruloid character, or is streaked with blood. In the second stage of the disease, while the mucous membrane of the bladder is becoming disorganized, and the patient sinking, the mucus gives way to pus, and the urine becomes alkalescent, has an ammoniacal odour, and effervesces with an acid: in this case there is almost always an excess of the carbonate of soda or of potash present derived immediately from "the serum of the blood." At a still later period the urine regains its acid character. "After death the urine is often alkaline in the bladder; but acid in the kidneys, provided those organs be not diseased."

Diseases of the bladder and prostate, of an *irritable* character, may result from functional derangement, or degeneration of the urinary organs; or from nervous affections of a remote or constitutional origin. When these diseases arise from functional derangement of the kidneys, they usually result from the unnatural properties of the urine. In a state of health this fluid is the natural stimulus of the urinary organs; when its properties are altered it may prove a cause of *feeling*, that is, a source of irritation to the kidneys and bladder, which in health gave no sign of its presence, except when unduly distended by it. It is stated by our author that organic diseases of the kidney are very various and frequently give rise to formidable cases of irritable bladder. After this announcement we should expect to find some distinct anatomical lesion of the kidney adduced as an example of the causes producing irritable bladder. But not so: we are indeed told that "the complaint" usually begins in the kidneys; that "the whole secreting structure of the kidney *seems to be* more or less involved;" and that "the mucous membrane lining the cavities of the kidney takes on

a peculiar diseased action;" and are moreover informed that the maladies in question bear some relation to those "connected with anæmotrophy," and are derived from "an inherited cachexia of which struma constitutes one of the ingredients, and very frequently a remote syphilitic, or malignant taint another." With such an explanation we are afraid that most readers will not distinctly recognize the "organic" renal disease which gives rise to the following symptoms.

The diseased action commences imperceptibly, and at first does not attract much of the patient's attention. After a time the urine is found to be generally acid, of a pale greenish, whey-like colour, opalescent from the presence of flocculi, of low specific gravity, often serous, but rarely bloody. Sometimes on being heated it deposits the phosphates, but on cooling seldom separates the lithate of ammonia; though when this takes place the deposit is usually gray, instead of pink or red. The patient has a frequent and urgent desire to pass water; urination is followed by uneasiness or severe scalding pain along the urethra. The discharge is free; and in the earlier stages, there is no suffering between the periods at which the patient is called to empty his bladder. As the symptoms augment, the unnatural properties of the urine increase; the patient becomes emaciated, weak, and irritable, and although not complaining of pain in the region of the kidneys, will often, on being questioned, admit the existence of a dull, aching sensation there. The pulse gradually becomes more quick and feeble, the stomach rejects its contents, and the urine is diminished in quantity. The patient becomes more indifferent and drowsy; all food is rejected, the urine entirely suppresed, and death from coma supervenes. Occasionally a more sudden termination, with inflammatory symptoms from exposure to cold, may take place. This affection occurs in females as well as in males, in which case the symptoms are modified by an increased vascularity and tumefaction about the orifice of the urethra, which with the whole of that canal, is exquisitely irritable, and appears to the patient to be the chief seat of her suffering.

The cachexia which gives rise to these serious and generally fatal symptoms, is, according to our author, the essential element of danger in fungus hæmatodes of the bladder, "a tumour *rendered malignant*," he says, "by being complicated with the above cachexia." The absence too of this complication renders harmless, except by their mechanical effects, all polypous excrescences, elongations, &c. of the mucous membrane of the bladder. The result of this doctrine appears to be, that "malignancy" is considered by Dr. Prout merely as a "species" of cachexia; a proposition which does not appear to be supported by facts.

Irritable bladder may be the chronic result of thickening or other disease of the coats of the bladder, of enlargement of the prostate, and of stricture of the urethra. It is stated that gouty irritation of the urethra often assumes of the characters of gonorrhœa, with profuse discharge, and scalding in passing water. The affection could not in the greater number of cases be traced to any distinct cause: in a few instances it seemed "to have been produced by sexual excitement." The rheumatic form of urethritis is also adverted to as marked by the same symptoms as those of the arthritic. These facts should not be forgotten by practitioners whose experience has been limited; they inculcate charity in making a diagnosis of urethral discharges. *Spasm* of the bladder, although in its origin usually of a nervous character, is yet, when of long standing, accompanied by

derangement in the quantity as well as in the properties of the urine. It may also depend upon the presence of stone or any other cause of irritation in, or near, the bladder.

Many hysterical symptoms are manifested by the urinary apparatus; or rather, hysteria simulates nearly every symptom which can be presented by disease of these organs. The following passage is both interesting and instructive:

"Innumerable instances have occurred to me in which calculi have been said to be passed from the kidneys and bladder by hysteric females. Such calculi I have examined, and found them to consist perhaps of a fragment of silex, or even of brick, in short, of any thing but what is known to be of urinary origin. Moreover, in some of these cases, a train of symptoms, resembling those accompanying nephritic attacks, have been stated to accompany the descent and exit of the calculus from the kidney and bladder. In such cases I have even seen the properties of the urine changed (I know not by what means), so as to correspond with the symptoms described; and there has been blood or mucus, or other unnatural matters, present in the secretion, as it were at the will of the patient. Hysteric females are subject, on certain rare occasions, to pass urine nearly black; and I have known this appearance kept up artificially for a long time together, by the admixture of ink with the urine. Retention of the urine is another occurrence; and the patient either cannot, or, as some suppose, *will* not, [both suppositions are probably true in different cases,] empty the bladder without mechanical assistance."

The precepts laid down by our author for investigating hysterical cases, are so judicious and important that we cannot forbear transcribing a portion of them.

"We should constantly remember," he remarks, "that the utmost duplicity and cunning may be displayed, where from mere appearances, we should expect nothing but the rigid truth; in short, that the whole energies of the patient's mind are bent upon deception, and consequently that the deception is likely to be greater, and more difficult of detection, in proportion as the patient is more highly educated, or has been more frequently seen and examined. One of the best modes of proceeding, therefore, at the outset, is to make the patient describe her own feelings in her own words; and if possible in her own handwriting. At any rate, the principal symptoms, as stated by herself, should be written down *before a single question is asked.* Indeed leading questions should be carefully shunned; for though the symptom inquired after may not be present at the time, yet the hint will be carefully treasured up in the memory; and the symptom will not fail to appear at some future time....I am most anxious not to be misunderstood. Nothing can be further from my wishes and intention than the design to convey an impression derogatory to female character. In hysteric cases both mind and body are really in a morbid state, and the patient *can scarcely be regarded in the light of an accountable being.*"

Under the heads of "diagnosis and prognosis" there is an admirable recapitulation of the symptoms in the several varieties of disease last described. But we can do no more than allude to it.

The *treatment* of bladder diseases receives very ample consideration: we shall give a digest of its more important parts. Vesical catarrh and chronic disease of the prostate gland are injured by very active measures. The application of cups or leeches to the perineum is indicated by abdominal congestion, and so also are purgatives, of which calomel is, for this purpose, one of the best. In the advanced stages of these affections, counter-irritants and issues are of little use. The diet should be light, digestible, and without stimulating condiments; moderate exercise on foot, in fine weather, is proper. Three classes of specific remedies are employed in these

diseases; the balsamic, the astringent, and the sedative. Of the first class the *diosma* is the best; then follow the balsams of Peru and Tolu, the Chian turpentine, copaiba, cubebs, &c. which are often beneficial in small doses. Of the astringents the *pareira brava* should rank first; then the *uva ursi*, and the *lythrum salicaria*, or loosestrife; the two last are less useful when there is vascular activity, than they are in irritative excitement. Of sedatives there are none that can do much towards allaying the irritation of the vesical mucous membrane, without affecting the whole system. On this account the mildest of them are the best. Of all painful sensations that which is described as a *burning smarting heat*, is least amenable to the influence of the milder narcotics. The above remarks are, in the main, applicable to the treatment of irritable bladder. Chalybeate preparations are here of use during the quiescent stage of the affection; but during excitement, especially if the urine has become decidedly serous, the citrate of ammonia, either alone or combined with the fluid extract of sarsaparilla, may be given. The intolerable irritation about the urethra in females, as already described, is best relieved by cauterization. A caution is given not to use the catheter too early in hysterical retention of urine, for very often as soon as the patient begins to suffer pain she is forced to evacuate her bladder; but if recourse be had to the catheter, the natural cure is prevented, and the existence of the disease may be prolonged for an indefinite period. Yet it should be remembered that the bladder may become paralyzed by over extension, and unable to expel its contents, in which case the use of the catheter is absolutely necessary.

The chapter on hæmaturia contains an account of the *diagnosis* of hæmorrhages from the urinary apparatus. It is written with remarkable clearness, but contains very little more than may be found in the best essays upon the same subject. The author is of opinion that when hæmaturia is connected with scurvy, typhus fever, &c. it should be treated by the mineral acids conjoined with quinine, galls, the muriated tincture of iron, &c.; and when these remedies fail, resort may be had to arsenic, zinc, or lead, of which the last, in the form of the acetate, is by far the most efficient. When the hæmorrhage is so profuse that the bladder becomes rapidly distended by it, the injection of cold water into the rectum or bladder is sometimes of great use; and should these means fail, a solution of twenty to forty grains of alum in a pint of water may be injected into the bladder, with the almost certain result of stopping the bleeding even when it proceeds from malignant disease. Respecting solvents for the stone, Dr. Prout advances the opinion, "that the urine itself, when in a perfectly natural condition is one of the most universal as well as powerful solvents we possess, for its own diseased deposits." Whether this be established or not, a practical inference from it commends itself to our attention: viz. "that in all cases of urinary concretion one of the first points to be attended to is to restore the healthy condition of the urine, by improving the general health, and the local condition of the urinary organs."

The foregoing analysis may be considered complete as far as our limited space would permit; sufficiently so, perhaps, to stimulate the curiosity of those who feel an interest in studying diseases of the urinary organs, though inadequate, it must be confessed, to present a full view of Dr. Prout's treatise. This treatise was received with so much favour by the medical profession in England, that, within three years from the publication of the third edition of it, a fourth was made necessary by the increas-

ing demand. We cannot doubt, therefore, that an American issue of the work would meet with an equally favourable reception. Too much can hardly be said in its praise, as a practical essay upon a class of derangements but little studied, and less understood, although of frequent occurrence amongst us; for every inquiring student of these affections will find in its pages valuable precepts for their management, and many satisfactory explanations of the obscure and complex phenomena which usually attend them. The original genius of the author may justly be urged in extenuation of the theoretical errors, which, to some extent, mar the perfection of his work. We conceive the chief of these errors to be an attempt to build a systematic classification upon uncertain chemical hypotheses on the one hand, and mere symptomatic differences on the other. Our author has not, indeed, adopted the conclusions of other observers, who from the vantage ground first reached by himself, have, in some respects, advanced still further than their predecessor; but let it not be forgotten that Dr. Prout deserves the credit of leading the way in the investigation of renal diseases, and that we are bound to feel grateful to him for what he has accomplished, rather than blame him for adhering, somewhat tenaciously, to his early and peculiar opinions. A. S.

ART. XI.—*The Theory and Practice of Midwifery.* By FLEETWOOD CHURCHILL, M. D., M. R. I. A. &c. &c. *With Notes and Additions,* by ROBERT M. HUSTON, M. D., &c., with one hundred and sixteen illustrations from drawings by Bagg and others; engraved by Gilbert, 8vo. pp. 519. Philadelphia: Lea & Blanchard, 1843.

IF the student of obstetrics should not, at the present day, become well grounded in the principles and practical precepts of the art, it will not be for the want of ample and efficient guides. The elementary knowledge necessary to prepare him for becoming a skilful and successful accoucheur, is now placed fully within his reach, and so plainly and explicitly defined, and ably illustrated, that his own stupidity or indolence, can alone prevent him from becoming a perfect master of it. In nothing has the medical press, within a few years past, been more fruitful than in elementary treatises and manuals of the theory and practice of midwifery, by gentlemen of skill and experience; while ingenuity has been taxed and all the various plans of illustration have been brought into requisition to render its theoretical precepts familiar, and its practical rules plain and explicit. A very respectable library might be formed of recent works on the obstetric art, each excellent in its kind, and the whole presenting a vast body of facts, precepts, and illustrations, affording important aids to the student, in the acquisition of obstetrical knowledge, and to the practitioner, in increasing his qualifications to afford efficient aid in the hour of suffering and of peril. Among these works we should assign a very high rank to the treatise of Dr. Churchill. This gentleman is already favourably known to the medical profession of this country by his two very excellent works on the Diseases of Females—a notice of which we gave to our readers soon after their appearance. The favourable impression formed of the author in this country,

as an accurate eclectic and well informed practitioner, will in no degree be impaired by the work before us. Presenting a very faithful exposition of the present state of obstetrics, and a full analysis of the opinions and experience of its most distinguished and successful cultivators, it will quickly find its way, as a useful manual, into the hands of the students and practitioners of the art. For although it may not supersede the necessity of an intimate acquaintance with the other standard works upon the principles and practical rules of midwifery, it is, nevertheless, well adapted to facilitate the study of these, and to recall subsequently the more valuable portion of their contents.

The work is divided into three parts. The first embracing the anatomy of the pelvis and organs of generation—the second the physiology of the organs of generation—and the third, the physiology of the uterus, or parturition.

The first part treats as well of the abnormal, as of the normal, anatomy of the pelvis and of the external and internal organs of generation, and presents a faithful and succinct exposition of every important particular in respect to these subjects that is necessary to be known by the practitioner; the whole illustrated by a number of most beautiful and extremely accurate wood engravings. In regard to the normal dimensions of the pelvis and the changes produced in these by various diseases of the osseous system, Dr. Churchill has given the measurements of all the leading obstetricians. Upon every point connected with the subjects embraced in this section, there will be found a sufficient degree of minuteness; while the details throughout are clear and explicit, and the general conclusions and practical applications plain and accurate.

The second chapter of part second, treats of menstruation and of its abnormal states. On the first, the author's account is full and interesting; in relation to the pathology and treatment of the several disturbances of the menstrual function, there is perhaps more conciseness than the importance of the subject, and the many gross errors which still exist in relation to it, would seem to demand. The principal subject of the volume being, however, the theory and practice of midwifery, it is only on those subjects having an immediate bearing upon the process of gestation and parturition that we are to expect more full details. The chapters which treat of generation, conception, and utero-gestation, embrace a notice of every well established fact in relation to these curious and important points of the physiology of the human female, and as explicit a notice as is necessary of the various opinions advanced in regard to them by leading physiologists. The ensuing chapter, on the signs of pregnancy, constitutes the first link of connection between the preliminary subjects and those immediately connected with the leading object of the work—the exposition, namely, of the present state of the theory and practice of midwifery.

In every point of view, it would be important to have in our power the means of determining, by some positive and unerring sign or combination of signs, the actual existence of pregnancy, at the earliest possible period of utero-gestation, as well as to be enabled, by certain phenomena, to ascertain its period and progress. While, however, in the early stage of pregnancy, it is impossible to determine with certainty its existence, and even at a later period there is much difficulty in arriving at a positive decision—yet, by a careful attention to all the phenomena incident to utero-gestation, the experienced practitioner will seldom be deceived in regard to its exist-

ence during the last three months. Dr. Churchill examines in detail the several signs of pregnancy, and exposes with great judgment their relative value.

Even as recent a writer as Rigby refers the sensation of quickening simply to the rising of the uterus out of the pelvis. Dr. Churchill adopts the explanation of the late Dr. Fletcher, of Edinburgh, of the reason why the movements of the fœtus are felt subsequently and not before this period, as upon the whole the most probable.

"The movements of the fœtus while the uterus is in the cavity of the pelvis are not perceived, because the uterus is not supplied with nerves of sensation, and it is surrounded by parts similarly deficient; but when it arises from the pelvis, it comes in contact anteriorly with the abdominal parietes, which are liberally supplied with sensitive nerves, and which by contiguity of substance, feel the movements, and thus the woman becomes conscious of them. This view is strengthened by the fact, of which I have been repeatedly assured, that the movements, unless when violent, are felt in front only."

These are certainly correct physiological reasons in favour of this explanation;—the absurd notion, that "the fluttering in the hypogastric region, often attended with sickness and faintness," that constitutes, in many cases, the sensation of quickening, is caused by "the *sudden* emergence of the uterus, towards the fourth month of pregnancy, from out the cavity of the pelvis," can have but few advocates at the present day.

Of the diagnosis of pregnancy—which in every point of view is an interesting and highly important subject—Dr. Churchill's conclusions are as follows:—

"The diagnosis of pregnancy in the early months must be more or less doubtful. No single sign can be relied on as conclusive; it is where two or three are present, and occur in proper sequence, that we can feel certain. For example: if a patient miss one or two (menstrual) periods, we may have grounds for suspicion, and these will be strengthened if morning sickness occur in the second month; but if to these be added enlargement of the breasts and darkening of the areola, the case will be pretty certain. In many cases, too, we may derive assistance from the character and circumstances of our patient. It is not, however, until the latter half of gestation that we obtain positive evidence, which can neither be simulated nor evaded."

We would warn the young practitioner against committing himself in deciding upon the existence or non-existence of pregnancy during the first four months, even when the presence or absence of all the usual signs appear to mark the case with the utmost certainty; we have known, more than once, the most ridiculous errors committed in this respect, and in one instance leading to very serious results. Probability may in many cases be obtained—absolute certainty, never.

In regard to the principal signs developed during the latter half of pregnancy—enlargement of the abdomen, quickening, the motions of the child, ballottement, and the results of auscultation, Dr. Churchill remarks:

"We find that while all are valuable, there is a degree of uncertainty attached to the three first which calls for a very careful estimate on our part: that the *positive* evidence of the latter modes of investigation is conclusive, but that the *negative* evidence or absence of the usual results, is no proof that the patient is not pregnant. So that, as before observed, we ought rather to depend upon the coincidence of two or more of the signs of pregnancy than attempt a diagnosis from any one alone: the only sign indeed which can be regarded as itself proving that the woman is pregnant of a living child, is the pulsation of the fœtal heart."

Of the value of *kiesteine*, as a test of pregnancy, Dr. Churchill offers no decided opinion, he merely presents the observations of Nauche, Eguisier, Montgomery, and Bird, and refers to future and more extended researches to confirm their accuracy. The results of Dr. E. K. Kane's observations made in the Philadelphia Hospital are added by Dr. Huston. The author notices, without comment, the test of Jacquemin, a violet colour, namely, of the vagina and labia. The results of Jacquemin's observations are confirmed by M. Parent Duchatelet.

The chapters on the Duration of Pregnancy, and Sterility, comprise a brief exposition of all the well established facts in relation to either subject; in his estimate of which the author exhibits his usual judgment and caution.

Dr. Churchill denies the possibility of superfœtation. After a brief review of the several facts adduced in evidence of its occurrence, he remarks:

"The real difficulties of such a theory appear insurmountable."—"Shortly after conception, the uterus is lined by the deciduous membrane, a shut sac, closely adherent to the lining membrane of the uterus throughout, and covering the orifices of the fallopian tubes; that the canal of the cervix uteri is, during pregnancy, plugged with thick tenacious mucus secreted by the gland; now, if this be the case, and if it be an essential condition of generation, that the spermatozoa pass through the fallopian tubes to the ovaries, it is evident, that the theory of superfœtation involves so much apparent physical impossibility, that it must be rejected, unless it can be shown how the spermatozoa can obtain access to the ovaries, when the uterus is, as it were, hermetically closed."

"In conclusion, I would say, 1. That the theory of superfœtation is *unnecessary* to explain the birth of a mature fœtus and blighted ovum; of a mature and immature fœtus, born together, or within a month of each other; or of fœtuses of different colours, as they may reasonably be supposed to be the product of one act of generation, or of two, nearly contemporaneous. 2. That, in cases of double uterus, it is possible for a second conception to take place, and—judging from the subsequent birth of the second child, in the only case on record—at a later period than the first. 3. That, in the remaining cases, where one mature child succeeded the birth of another after a considerable interval, we have no proof of a double uterus in any, and positive proof, in one case, it was single, and that to the explanation of these cases, no theory as yet advanced, is adequate: that of superfœtation being opposed by physical difficulties, which are insurmountable in the present state of our knowledge."

There is much force, and a great deal of good sense in these remarks of the author.

On the subjects of extra-uterine pregnancy—and on the signs of the death of the fœtus, a very admirable summary of the present state of our knowledge will be found in chapters 9 and 10. The subjects of chapter 11, are abortion and premature labour—which are treated with the usual judgment of the author. We are surprised to find him declare that, in arresting the flooding consequent upon abortion, he has not seen much benefit result from the use of acetate of lead. We have had a good deal of experience of the effects of the remedy in these cases, and must say, that it has appeared to us invariably to exert a very powerful influence in arresting the hæmorrhage—we have employed it by itself, in doses of three grains every two hours; in grain doses, combined with the third of a grain of ipecacuanha every hour, and in doses of three grains, with half a grain of opium, and the third of a grain of ipecacuanha, every three hours—and have, in no instance, been disappointed in its effects.

In addition to Dr. Churchill's remarks on the prevention of abortion, the

editor adds, that he has "succeeded in some very obstinate cases, by confining the patient to her sofa, commencing some time before the usual period of miscarriage, and continuing several weeks after the time had gone by—carefully avoiding the erect position, and all unnecessary muscular exertion, and using, at the same time, injections daily of opium, in sufficient doses to prevent uterine action—the quantity varying from two to five grains, in the state of powder, suspended in mucilage. By these means, a condition of tolerance, on the part of the uterus, is acquired, which allows gestation to go to the full term."

This we know, from experience, to be an admirable procedure. We may remark, that in some cases of threatened abortion, we have reason to believe the loss of the ovum was prevented by the application of a blister to the sacrum, upon the first appearance of symptoms indicative of an approaching miscarriage.

The chapter on abortion and premature labour closes the first two sections of Dr. Churchill's treatise. The subjects comprised in these sections are certainly treated in a very masterly manner; and notwithstanding some of the chapters may be deficient in very important details, the whole, nevertheless, constitutes one of the very best summaries with which we are acquainted; to beginners it presents a very valuable introduction to the study of the more extended treatises and monographs, while to the obstetrician busily engaged in the practice of his profession, it will be a useful remembrancer of the more important facts connected with the science, and a guide to the improvements introduced by the more recent investigators.

The remaining part of the treatise is devoted to a consideration of midwifery properly so called,—that is, parturition, with its abnormal varieties.

Dr. Churchill divides all labours into three general classes, natural, unnatural, and complex. Unnatural labour he divides into three orders. 1st, from abnormal condition of the expulsive force, including tedious labours; 2d, from abnormal condition of the passages, either obstructions from the soft parts or from distortion of the pelvis; 3rd, from abnormal condition of the child—either malposition, malpresentation, plurality of children, or monstrosity. Complex labours, include prolapse of funis, retention of placenta, flooding, convulsions, lacerations, and inversion of the uterus.

This arrangement, which is nearly the same as that followed by Merriman in his "Synopsis of difficult Parturition," merely substituting plain English names for the several classes and orders of labour in place of those adopted by Dr. Merriman, formed by a barbarous combination of Greek and Latin.

Dr. Churchill has presented a table of the relative frequency of the several fœtal presentations, in the practice of a number of distinguished obstetricians—by which it appears, that in an aggregate of 78,027 labours there were 73,647 head presentations, 1257 breech presentations, 1009 presentations of the inferior extremities, and 294 of the superior extremities.

The all-important subject of the mechanism of labour is considered in the second chapter. To this the author devotes considerable space, and very properly so—it is by his perfect acquaintance with the mechanism of parturition that the accoucheur is rendered competent to decide upon many of the more important questions connected with the condition and progress of labour; and in cases where the aid of instruments is required, it is in vain for him to attempt their application unless perfectly familiar with the

manner in which the fœtus enters and passes through the several parts of the pelvis. On every point connected with the mechanism of labour, the expositions of Dr. Churchill are perfectly clear and precise—he has adopted throughout the views of Professor Naegele of Heidelberg, which, in many particulars, differ materially from those of the generality of the French and English authorities on this subject, but we are convinced that when carefully examined they will be found to correspond very closely with what actually takes places in the major number of the cases of natural labour.

The author's description of natural labour (chapter 3) is marked by great minuteness and accuracy; we recommend it to be closely studied by every pupil of the obstetric art, and we are convinced that even the young practitioner would not find the time devoted to its attentive perusal altogether unprofitably spent. By becoming perfectly familiar with all the phenomena of natural labour he will save himself often much anxiety, and be at the same time better prepared to give prudent encouragement to his patient, "whose mental suffering in many cases equals if it do not outbalance her physical pains." He will learn, too, an important lesson, which cannot be too often enforced, "that most of the modern improvements in midwifery have resulted from a more correct appreciation of *the natural powers;* so, in the management of natural labour, the great improvement has been the absence of interference."

The following, though a plain common sense direction, we extract, in hopes that it may benefit certain inexperienced practitioners of midwifery, who often do much harm to their patients, and lay themselves open to disappointment and censure by disregarding, or rather not constantly recollecting it.

"It is very desirable to keep her (the parturient female) tranquil and cheerful, for which purpose *she should be told* of all that is favourable in her case, and all subjects calculated to depress should be avoided. In this matter much depends on the nurse, who should receive proper caution. I am satisfied, that in most, if not all cases, it is better to deal frankly with our patient, and not to make false promises in hopes of encouraging her to bear the pains. Let her be told that all is favourable, and that, *as far as we can judge*, the labour will terminate safely for herself and her child, and she will bear to be told, that she has yet some time to suffer. Moreover, as it is impossible to calculate with accuracy upon the duration of a labour, an assurance that it will be over in a certain time will, in all probability, issue in disappointment, and if so, in distrust either of our truth or skill."

The obstetrician who will wantonly trifle with the feelings of his patient, by enhancing the difficulties of her case, merely to establish for himself a character for uncommon skill, or who, ignorant of the real character of her case, will promise her "a speedy and safe deliverance from her pains" until the hour for affording her efficient assistance is almost or entirely passed, is totally incompetent to fulfil the important and responsible duties of the office he has assumed. Nevertheless, such unworthy practitioners of the obstreteric art it has been our misfortune more than once to encounter.

Dr. Churchill's directions for the management of the mother and child subsequent to delivery are, in general, marked with the same good sense as those for the conducting of the labour—with the propriety of a few of his directions we cannot, however, exactly agree. Thus, immediately upon the expulsion and removal of the child he directs a bandage to be applied

firmly around the mother, embracing the hips inferiorly and the whole abdomen. It is true that he adds,

"I do not know that we can consider the binder absolutely necessary. Dr. Davis states that he has not used one for fifteen or twenty years, except in cases of flooding; it is, however, very useful at first in maintaining a certain degree of contraction of the uterus, and giving support to the abdomen, and afterwards in promoting a return to the natural condition of the uterine parietes, for which reason I think it deserving of rather more attention than is usually paid to it, at least after the first day or two. I believe that if it be duly applied during the time the patient keeps her bed, she will avoid that loose state of the integuments which gives rise to what is called 'pendulous belly.'"

We are opposed to the application of the bandage until after the expulsion of the placenta and all danger of hæmorrhage is removed by the full contraction of the uterus. We cannot conceive of any benefit that can result from the application of the bandage previous to the delivery of the secundines, to compensate for the inconveniences that may be produced by the disturbance of the patient necessary for its application. How the bandage can assist the contractions of the uterus and facilitate the expulsion of the placenta, or afford any additional security against the occurrence of internal hæmorrhage or of flooding, we cannot understand. Subsequently, however, when labour is completed the bandage affords a pleasing feeling of support to the patient, and perhaps may contribute towards a more complete retraction of the abdominal parietes. In all cases, however, the practitioner should assure himself of its proper application—the careless manner in which it is too often put on by the nurse or attendants, causes it to exert an unequal pressure upon the abdomen, from which more evil will result than if the bandage were entirely omitted.

In his direction for the management of asphyxia in new-born infants, the author advises "a proper tube" to be "introduced into the larynx, or a flexible catheter passed through the nose," for the purpose of artificially inflating the lungs. The use of the proper tube or flexible catheter is neither necessary nor proper. All that is requisite is to close the nostrils of the child with a finger and thumb, and to inflate the lungs from the mouth of the operator applied to that of the child, the latter being previously covered by a silk-handkerchief or piece of fine soft linen.

Some excellent observations and sound practical directions are contained in the next chapter (chapter 4), on "convalescency after natural labour."

We are pleased to find that the author teaches, that, the operation of the after pains is, "within certain limits, undoubtedly salutary," by preventing hæmorrhage, diminishing the size of the uterus, and expelling its contents. We trust that this will have a tendency to counteract the absurd and mischievous direction given in some of the books, and not unfrequently acted upon—namely, to "administer as soon as the patient is placed comfortably in bed a full dose of laudanum or a pill of opium and camphor, to prevent the occurrence of after pains."

The author directs the child to be applied early to the breast; "the sooner this is done the better, as the secretion and escape of the milk will be facilitated, the feverishness diminished, if not avoided, and a good nipple more easily formed than when the breasts are distended."

We copy the following observations of the author in relation to those cases in which "*the nervous shock*," which invariably occurs after labour, is very severe. They afford a very good specimen of the manner in which

the several subjects are treated by him, and at the same time recommend themselves to general attention from their importance;—the condition to which they refer being too often misunderstood, and in consequence erroneously treated.

"In these cases," remarks Dr. Churchill, "the patient complains of great exhaustion; the senses are either unnaturally dull, or morbidly acute; the breathing is hurried, and panting, and the accordance between the respiration and circulation is broken. The aspect of the patient is that of a person in a state of collapse. The countenance is expressive of suffering, anxiety, and oppression. The pulse may be either very slow and laboured, or unusually rapid, very small, and fluttering. There are many cases, however, where the shock, though far from being so severe as in the case I have supposed, is quite sufficiently so to excite the fears of the medical attendant. Reaction is long before it occurs, or it may take place imperfectly or excessively, and the patient remains for some time in a very weak condition.

"Under proper treatment, the patient will gradually recover from this state of exhaustion or collapse, unless the shock be excessive, and then death will supervene in a few hours. I have seen several cases of this kind; in one case, the labour was tedious, but terminated naturally; two others were instrumental deliveries; but in none where a *post-mortem* examination was obtained, was there either injury or disease discovered.

"A due estimate of the nervous shock is of great importance in severe cases; for in almost every instance, the progress of the convalescence is in inverse proportion to the amount of this disturbance.

"The best remedy in these cases is opium, either in a large dose or in small and repeated ones; it not only gives the patient a chance of sleep, the best restorative of all, but even if it fail in this, the system will be quieted, the respiration rendered more equable, the pulse slower, and more natural, and the relation between these two systems restored. The exhibition of stimulants—wine or brandy and water—in moderate quantities, is necessary; but we must be careful not to exceed, or they will do mischief instead of good. The amount of stimulants given in cases of collapse should have some reference to the probable reaction, as well as to the present state of the patient. Ammonia or musk are the best medicinal stimulants, and they may be combined with the opium. The diet of the patient, when the effects of the shock have subsided, must be nutritious. It may be necessary to postpone the application of the child to the breast for some days, or even to give up suckling altogether in some cases. All that has been said already upon the necessity of perfect quiet, applies with tenfold force to these cases of extreme nervous shock."

A very sensible note is appended by the editor, Dr. Huston, enforcing the observations of the author, from which we quote the following paragraph:—

"I have seen more than one instance in which there was reason to believe the life of the patient was sacrificed from ignorance of the condition here referred to. If the attention of the practitioner, at the time, be particularly directed to puerperal fever, he is liable to confound this exhaustion with the early stage of that disease. The cold extremities constitute the *chill*, while the haggard countenance, hurried respiration and frequent pulse, are regarded as conclusive evidence of a rapid peritonitis. Bleeding from the arm or by leeches, is the instant resort, and a few hours confirm the worst anticipations by the fatal termination, which the efforts of the attendant have but too successfully aided in producing."

The doctor draws here no "fancy sketch"—the thing has actually occurred within our own knowledge.

Dr. Churchill's next chapter (chapter 5) is devoted to the consideration of tedious labour. Some interesting tables are presented to show, 1st, The frequency with which the duration of labour is prolonged beyond

twenty-four hours. This was found in 23,758 cases to occur in the proportion of one to thirty-six, nearly. 2dly, The relative duration of each stage, in labours of twenty-four hours and upwards, in which the delay occurred in the first stage, and the results to the mother and child. The entire number of cases included in the second table are 143. "Of these, not one of the mothers died, although in some the first stage was enormously prolonged, and but ten of the children, one of which was putrid."

"If," the author remarks, "the relative length of the stages be examined, it will be found, that it did not follow, because the first was very long, that the second should be long also; and in many cases, not included in the table, when the second stage was delayed, the first was extremely short. Thus I think that, so far as it goes, this table proves the propositions with which I started, viz. that when delay is excessive, the relative duration of the two stages is destroyed, so that they bear no steady proportion to each other; and that 'delay in the first stage involves very little if any danger, no matter how tedious it may be.'

"The nervous shock is never in proportion to the length of the first stage of labour, but of the second."

Dr. Churchill considers the causes and treatment of the delay in the first stage of labour, under the heads of, 1st. inefficient action of the uterus—from constitutional weakness, a deranged state of the digestive organs, mental depression, uterine plethora, or irritation of the os and cervix uteri, &c. 2d. Undilatable os uteri. 3d. Excess of liquor amnii. 4th. Toughness of the membranes. 5th. Premature escape of the liquor amnii. 6th. Obliquity of the uterus. Under each of these heads the practical remarks of the author are in the highest degree judicious, and admirably adapted to lead the student to correct views of the character and treatment of a class of cases which try the patience alike of the practitioner and patient—and in which the inexperienced obstetrician is very liable to be led into rash and hasty interference.

Under the first variety of tedious labour, that from inefficient action of the uterus, the author considers the effects of ergot, and the propriety and rules for its administration. From repeated trials he is prepared to bear witness to its efficacy in accelerating labour, though it is somewhat irregularly exerted; but he adds, "I have seen it do mischief." Dr. Churchill speaks of cerebral disturbance in the female, in different degrees, from a severe headache up to delirium, coma, and insensibility, follow its use. Although we have had an opportunity of witnessing the very extensive exhibition of ergot, and often in very large doses, we have never observed any of those phenomena produced by it. We have found it very frequently to excite nausea and vomiting, and when imprudently administered it is certainly very liable to destroy the child. Drs. Ramsbotham, Patterson, and Huston bear witness to its powers of *originating* uterine action;—this is contrary to our experience; we have seen it repeatedly given for this very purpose—but, invariably without effect.

The student will acquire, from the rules laid down by Dr. Churchill, in connection with the additional remarks of his able editor, a very correct knowledge of the circumstances under which the ergot may, with comparative safety, be employed as a means of accelerating labour, and those under which its employment is decidedly improper.

Dr. Churchill, after noticing the beneficial effects of bleeding in cases of rigid os uteri as originally recommended by Dr. Dewees, adds,

"Should the venesection only partially succeed, however, or in case it be not

desirable to have recourse to it, we may then try the tartar emetic, which I believe was first used in these cases by Dr. Evory Kennedy of this city. It is an exceedingly valuable remedy, perfectly safe, and very successful. It should be given in small doses, so as to excite and keep up a state of nausea, and it may be advantageously combined with a purgative—take, for instance, the following formula.—℞. Magnes. sulp. ℥i; infus. sennæ, ℥vijss; antimon. tart., gr. iij.; syr. zingib. ℥ss; M. capiat cochlearia duo omni semihorâ, vel omnia horâ."

The sixth chapter is devoted to the consideration of powerless labour. That is, labour prolonged in the second stage from deficient uterine action. Upon this important subject the author's remarks and practical directions are extremely judicious, and marked by that prudent caution which is so important a trait in the accomplished accoucheur, and which is in no degree incompatible with promptness and decision when the true period for action has actually arrived.

The ensuing chapter treats of obstructed labour—1st. From mechanical obstruction in the soft parts—minute or imperforate os uteri; of obstruction from this cause there are but few cases upon record—carcinoma or scirrhus of the uterus; these cases are also extremely rare—narrow and undilatable vagina—tumours in the pelvis; a beautiful engraving is given to show the manner in which delivery may be obstructed by polypus uteri—diseased ovary; this is also illustrated by an engraving—vaginal cystocele; this very rare obstruction is made perfectly intelligible by an engraved illustration—calculus in the bladder; but few cases of this cause of obstruction are on record—vaginal hernia—swelling of the soft parts—imperforate hymen; of this Dr. Churchill has seen one case—rigidity of the perineum. The whole of this chapter is highly interesting—we must be permitted to copy the general rules laid down by Dr. Churchill for the conduct of such cases; they are replete with sound sense and prudence:—

"1. In no case need we interfere, when the obstacle can be overcome by the natural powers within a reasonable time. 2. That the less serious the mode of interference the better; so that, if the natural efforts are insufficient, we should endeavour to push the obstacle out of the way, to remove it; or to puncture it. 3. That if the uterine efforts be vigorous, the mere removal of the obstacle will enable them to complete the labour. 4. That in some cases, besides removing the cause of delay, it is necessary to employ extracting force; and in such cases, the less violent the operation the better; thus the vectis—if effectual—would be preferable to the forceps; the forceps to the crochet, and the crotchet to the cæsarian section. 5. But in our estimate of the risk of these operations, we must not omit the time they occupy, with reference to the condition of the patient; thus the time gained by the forceps may render it more useful than the vectis. 6. When the forceps cannot be used, no false humanity should make us hesitate to destroy the child. I assume, of course, the necessity for an operation in time to save the mother; because its life is sacrificed already, and both it and the mother will be lost, if we do not terminate the labour."

Obstructed labour from deformity of the pelvis is the subject of chapter 8;—which leads at once to the consideration of obstetric operations, (chapter 9.) In relation to the operative department of midwifery there has existed a greater amount of controversy than with respect to either of the others; and even now, upon many of the questions connected with it—the nature of the cases in which artificial assistance is demanded—the proper period for resorting to it—the nature of the assistance demanded—and the form and construction of the proper instruments—there still exists not a little discrepancy of opinion among the masters of the art. Each of the operations are examined by Dr. Churchill in detail. The induction of

premature labour, version, the use of the vectis, and of the forceps, craniotomy, the cephalotribe, and the cæsarian operation. The circumstances under which one or the other is demanded, are minutely and cautiously considered—and the rules for the performance of each are clearly and fully detailed.

The chapter on the induction of premature labour is one of the most interesting in the whole volume. The author, after presenting a brief but very satisfactory abstract of the opinions and experience of all the leading authorities upon the subject, concludes, that from the facts and testimony adduced, the three leading principles of the *morality*, *safety*, and *utility* of the operation are fully established—and then proceeds to inquire as to the cases in which it is available. On this particular Dr. Churchill has collected an interesting mass of facts, and has presented them in a manner calculated to clear it of many of the difficulties in which it is generally supposed to be involved; the objections to the operation are fairly, and we think satisfactorily answered, and we trust that our author's labours may be the means of bringing the operation into more general use—for it is unquestionably adapted, in the cases in which it may be resorted to, to save the patient much suffering and anxiety, and very frequently, to contribute to the safety of the mother and often of the child also. The author's examination of the several modes that have been proposed for the induction of premature labour, though concise, is well calculated to lead to their just appreciation.

Version or turning comes next under consideration (chapter 10). The whole of the chapter devoted to this operation is replete with valuable information. The mass of statistical and other facts the author has collected in reference to it are well calculated to lead the student to correct views in relation to its value—the cases in which it should be performed, and the proper period at which it should be resorted to. The pictorial illustrations of the manner of conducting the operation are accurate and satisfactory. The chapter concludes with a summary of the difficulties attending its performance, and the danger to the mother and child that may result from it.

The vectis or lever (chapter 11) Dr. Churchill considers may be advantageously employed in cases in which the head, having descended into the pelvic cavity, is arrested in its progress, simply by the inefficiency, not absence, of labour pains, and when the patient is beginning to show symptoms of constitutional or local disturbance; and in cases of convulsions, or other accidents occurring during labour, provided only that the pains continue. The method of operating is laid down with great clearness, and illustrated by an admirable engraving. The dangers that may result from the use of the instrument are stated aphoristically in the conclusion of the chapter.

The important subject of "the forceps" comes next under consideration (chapter 12): the invention of this instrument the author considers to be "the greatest improvement that has ever occurred in midwifery." A short history of the introduction of the instrument, and of the modifications it has undergone is first presented, followed by a brief statement of the object of the operation, and the nature of the aid afforded by the forceps. The statistics of the operation are given next, in tables showing, first, the frequency of the operation among British, French, and German practitioners; by which it appears, that among British practitioners 126 forcep cases occurred in 45,634 cases of labour, or about 1 in 362. Among the French 277 forcep cases in 44,736 cases of labour, or about 1 in 162:—and

among the Germans, 1702 forcep cases in 261,224 cases of labour, or about 1 in 153½:—adding the whole together, we find 2105 forcep cases in 351,594 cases of labour, or about 1 in 167.

The next table exhibits the results of the operation to mother and child. From the whole number of forcep cases in which the result to the mother is stated, we shall find, that among the British practitioners in 302 forcep cases, 14 mothers were lost, or 1 in 21½:—among the French and German practitioners, in 479 cases, 35 mothers were lost, or about 1 in 13½:—whilst of the children, the British statistics give 64 lost in 296 cases, or about 1 in 4½; and foreign statistics 111 in 575 cases, or 1 in 5. The total result is, that in 781 forcep cases, 49 mothers were lost, or about 1 in 16; and in 871 cases, 175 children were born dead, or about 1 in 5.

"It will be admitted, I think," the author remarks, "that these tables exhibit British practice in a very favourable light;" "very favourable," Dr. Huston observes in a note, "if we say nothing of crochet cases."

"It would be unjust," Dr. Churchill adds, "to compare the frequency of forcep cases among the Germans and British, without recollecting the minor degree of mortality amongst the children in the practice of the former, and the very much smaller number of crochet cases. It would seem, that although the Germans use the forceps much more frequently than we do, they often thereby avoid a much more fatal operation."

The author next compares the results from the use of forceps with the results from the use of the crochet. In the latter of course *all the children are lost*, and *one* in *five* of the mothers; whereas, by the forceps *four* out of *five of the children*, and *twenty* out of *twenty-one* of the mothers, are saved; and "if we had more minute reports, the success would undoubtedly appear much greater."

The special advantages of the forceps are next considered, with an examination of the objections that have been made to their use. In proceeding to a review of the cases to which the forceps has been considered applicable, Dr. Churchill sets out with the following important position:

"That in no case is the forceps, or, indeed any instrument to be applied, until we are perfectly satisfied that the obstacle cannot be overcome by the natural powers with safety to the mother and child."

A rule that should be inscribed in large letters on every case of obstetrical instruments; nothing is certainly more reprehensible than to resort to instruments, in any instance, merely to shorten the labour, or as it has been stated in our hearing, "to save the mother so many hours of pain."

The proper period for operating is an important question. Upon the early resort to instrumental assistance, in the cases in which it is decided to be necessary, will in a great measure depend the safety of the child, and to a certain extent that of the mother also; we are to recollect that the Germans operate more frequently, and at an earlier period than the British, and that they have fewer crochet cases. The remarks of Dr. Churchill upon this point are short but pertinent. We believe, however, that in many cases, the safety of mother and child will be better secured by operating at even an earlier period than that advocated by the author, though as a general rule, the views expressed by him are perfectly sound.

The rules for the application of the instrument follow next in order—they are sufficiently clear and accurate, and are beautifully illustrated by engravings.

A very valuable addendum to this chapter is from the experienced and

able editor, Dr. Huston; chiefly in reference to the form and construction of the forceps intended to act upon the head at the upper strait. The instrument advocated by this gentleman is that of Siebold with certain modifications, principally in adding an inch to the length of the blades, shortening somewhat the handles, doubling the width of the fenestra, and giving a greater sweep to the second curve. The instrument is calculated in every case, to be passed along the *sides* of the pelvis. A drawing of this forceps is given.

An account and drawing is also given of a modification of the long French forceps, contrived by Professor Hodge, of the University of Pennsylvania, whose views as to the mechanical properties which are necessary to adapt the instrument to all cases of difficulty that require its application are in accordance with those of the editor.

Craniotomy; its history; the instruments employed; the object of the operation; its nature; statistics; its comparative advantages; the cases in which the operation is demanded; the period of labour when it should be performed; the mode of operating and the difficulties and dangers of the operation, are the subjects of the next (13th) chapter.

From the statistical tables, it appears that among British practitioners, there were 218 crochet cases in 47,851 cases of labour, or about 1 in 219. Among the French, 30 in 36,169, or 1 in 1,205⅔; and among the Germans, 132 in 256,655 labours, or 1 in 1,944⅓; forming an aggregate of 380 crochet cases in 340,675 cases, or 1 in 896½. The mortality to the mother was 52 in 251, or about 1 in 5. Its advantages over the cæsarian section are very decided; the mortality from the latter being 1 in 2⅓ of the mothers, and 1 in 3½ of the children; but it falls short, greatly, in point of advantage to the induction of premature labour, which, timely performed, may supersede the necessity for embryotomy, and from which the mortality to the mother is 1 in 50, while more than half the children are preserved.

The whole of this chapter is deserving of an attentive study on the part of the practitioner as well as of the pupil of obstetrics. When unfortunately reduced to the disagreeable necessity of resorting to it as the only means of saving the life of the mother, the pictorial illustrations furnished in the chapter before us, will afford useful aids in enabling the young obstetrician to understand the manner of performing the operation.

The cæsarian section is an important and interesting subject. In relation to the propriety and comparative advantages of the operation, a very great discrepancy of opinion exists, and among contending statements of its favourable or unfavourable results there is much difficulty of arriving at correct conclusions in relation to it. After a succinct history of the operation, Dr. Churchill proceeds to consider its objects, which are "to afford a chance of escape to the mother, and of life to her child; in cases where the child cannot be extracted through the natural passages by any means at our command; to extract the child so promptly as to afford it a chance of life, when the death of the mother has taken place suddenly, and to relieve the mother from the risk of fatal inflammation, owing to the presence of the fœtus in the abdominal cavity, acting as a foreign body. Two tables are presented, the first showing the number of successful cases on record, with the number of hours the mother was in labour, and, when mentioned, the cause of its performance. The second table shows the unsuccessful cases, with similar details. From these tables it appears that

in British and American practice, out of 43 cases, 12 mothers were saved and 32 lost, or about three-fourths; out of 41 cases where the result to the child is mentioned, 23 were saved and 18 lost; or 1 in 2¼. In the practice of continental obstetricians, in 371 cases 154 mothers died, or about 1 in 2½. Out of 189 of the cases where the result to the child is given, 50 were lost, or nearly one-fourth. Taking the aggregate of all these cases, we have 414 in which the cæsarian operation was performed, 229 mothers saved, and 186 lost, or about 1 in 2¼; and out of 230 of the children thus delivered, 162 were saved, and 68 lost, or about 1 in 3⅓.

The conclusions of the author in relation to the operation are extremely sound.

"It does," he remarks, "afford a chance to both mother and child, and, therefore, we may be justified in having recourse to it; but, as the danger is much greater than from any other operation, we should not be warranted in performing it, if there were a prospect of success by any other means. This, then, constitutes the *sole advantage* of the operation, that in cases where we cannot deliver the patient by any other means, and when, consequently, both mother and child would inevitably die, if left unaided, we may afford each a chance, by performing the cæsarian section."

Symphyseotomy (chapter 15) he considers as under no circumstances either advantageous or proper.

Malpositions and malpresentations are the subject of chapter 16. Face presentations, according to the tables given by Dr. Churchill of the British, French, and German practice, occurred 626 times in 129,489 cases of labour, or 1 in 206¾ cases. In 344 cases of which the results are given, 248 were delivered naturally, and 77 required artificial assistance; viz. 42 version, 20 forceps, and 15 craniotomy. In 150 cases, 3 of the females died, or 1 in 50; and of 216 children, 14 were lost, and 15 destroyed, or about 1 in 7. The author recommends that no assistance be given in this form of malposition, unless there should be a disproportion between the size of the head and the pelvis, or the pains should become insufficient, or accidental complications occur; then if within reach, the forceps will probably be the best instrument. Three engravings are given illustrative of face presentations.

The forehead towards the arch of the pubis. From the statistics given, it appears that this malposition occurred 72 times in 23,050 cases of labour, or about 1 in 320 cases. In 22 cases, 9 of the children were lost. There is nothing to be done unless under the same circumstances as require assistance in face presentations, where the forceps will become necessary; a pictorial illustration is given of this malpositon.

Of the malpresentations, that of the breech occurred 1 in 53⅓ cases; of the inferior extremities, 1 in 90¼; of the superior extremities, 1 in 261⅔ cases of labour. In 598 cases of breech presentation, 177 children were lost, or 1 in 3¼. In 537 presentations of the inferior extremities, 205 of the children were lost, or about 1 in 2½. In 240 presentations of the superior extremities, 125 of the children were lost, or about 1 in 9. These several malpresentations are illustrated by eight engravings.

The description, diagnosis, and practical rules for the management of the presentations enumerated that are given in the chapter before us, are marked by the author's usual accuracy, clearness and judgment. From a careful study, correct views of their nature, phenomena and management cannot fail to be acquired.

The chapter closes with a consideration of compound presentations; the hand or arm, and head, or the feet and hands; with pictorial illustrations.

Plural births are treated of next (chapter 17). We learn from the statistics furnished by the author, that in 161,042 cases of labour occurring in Great Britain, 2,477, or about 1 in 69 were cases of twins, and 35 of triplets, or 1 in 4,473; in 36,570 cases occurring in France, 332 or about 1 in 110 were cases of twins, and 6 of triplets, or 1 in 6,095. In 251,386 cases occurring in Germany, 2967 or about 1 in 84 were cases of twins, and 35 of triplets, or 1 in 7,185 nearly. Adding all these numbers together, we have in 448,998 cases, 5,776 of twins, or 1 in 77¾; and 77 of triplets, or 1 in 5,831. In 697 cases of twins, 1,394 children, 417 were lost, or about 1 in 3½; and of twelve cases of triplets, 36 children, 11 were lost, or 1 in 3. Tables are also given of the sexes and presentations in twin cases.

The directions of Dr. Churchill for the management of twin and triplet cases are clear and judicious.

Some excellent remarks will be found also in this chapter, on cases of fœtal monstrosity, with directions for their management; one illustration is given.

Prolapse of the funis umbilicalis (chapter 18) occurred 401 times in 98,512 cases of labour, or about 1 in 245½. In 355 cases, 220 of the children were lost, or more than one half; a larger mortality, Dr. Churchill remarks, than we find in any other order of *practicable* labour.

The various plans of treatment proposed by different writers are passed in review and an estimate given of the practicability and advantage of each. The mode of operation in these cases will, however, in a great measure depend upon the particular circumstances of each case.

Retained placenta (chapter 19) is but a relative term; different authorities giving a different period, as that during which it is proper to wait for the expulsion of the placenta by the natural efforts of the uterus, before any attempt is made to expedite its delivery, or to remove it by the hand; consequently the statistics of this form of complex labour are of little value. The rule given by the author in regard to the delivery of the placenta, is an admirable one, and if generally acted upon, would save the patient from any danger resulting from premature and rash interference on the one hand, or from hemorrhage or the risk of uterine phlebitis on the other. It is this:

"We do not interfere when the uterus is adequate to the expulsion, but when we are convinced that its efforts are suspended or inadequate, we extract it to avoid the risk of hemorrhage or inflammation of the uterus."

The treatment will depend in a great degree upon the cause of retention; and will be found clearly laid down in the chapter under consideration.

Flooding (chapter 20): this is an important subject, and as such has received its full share of attention on the part of our author. In 68,962 cases of labour, flooding it appears occurred 424 times, or about 1 in 162½. In 537 cases, 97 mothers, or about 1 in 5½ were lost. In 443 cases, 109 of the children, or 1 in 4 nearly, were lost.

The cause of accidental hæmorrhage, that is, where the placenta is in its ordinary situation, is the separation of some portion of it from the womb, and the laceration of its vessels. The exciting causes, the symptoms, diagnosis, and treatment are very fully and clearly stated.

Unavoidable hæmorrhage results from the implantation of the placenta

over the os uteri, or at the cervix uteri. The symptoms, diagnosis and treatment are given with equal fulness and clearness.

Hæmorrhage after delivery receives a short notice at the close of the chapter.

Convulsions forms the subject of chapter 21. Dr. Churchill divides convulsions, as they occur during gestation, or immediately before, during, or after parturition, into the *hysteric*, the *epileptic*, and the *apoplectic*.

Of puerperal convulsions there occurred 159 cases in 96,903 labours, or 1 in about 609. In 152 cases of convulsions, 42 mothers were lost, or more than a fourth. The great majority of the cases on record occurred in first labours.

Dr. Churchill has presented a very able account of the causes, symptoms, termination, pathology, diagnosis and treatment of the two forms of puerperal convulsions, the epileptic and apoplectic, with a copious reference to the opinions and experience of the leading writers on the subject.

Rupture of the uterus and vaginal, vesico-vaginal and recto-vaginal fistula, and laceration of the perineum come under consideration in chapter 22.

Rupture of the uterus occurred 65 times in 42,768 patients, or about 1 in 657. In 75 cases it occurred 9 times in the 1st pregnancy, 14 in the 2d, 13 in the 3d, and 37 times in the 4th or subsequent pregnancies. In 68 cases the accident proved fatal to the mother in all but six.

The author presents a very interesting account of the causes of ruptured uterus; his account of its pathology, symptoms, terminations, diagnosis and treatment is also admirably calculated to lead to correct views.

The other subjects of this chapter receive from Dr. Churchill that attentive consideration which their importance demands.

Inversion of the uterus is the subject of the ensuing chapter (23d); and the remaining four chapters are devoted to a consideration of the principal diseases of the puerperal state, puerperal fever, phlegmasia dolens, puerperal mania, and ephemeral fever; all of which are treated in the same clear, cautious, and able manner which distinguishes every portion of the volume before us; we are acquainted, indeed, with no work better calculated to induct the pupil into a knowledge of these respective subjects, or in fact, of all the subjects it comprises, and to prepare him for the study of the standard treatises on the nature and management of the several accidents of the parturient and puerperal states, and the theory and practice of midwifery generally; while the practitioner will find it a useful volume for almost daily reference. Forming as it does a kind of analytical index to the various facts and observations on each of the subjects of which it treats, and presenting a very fair comparative view of the opinions and experience of the great masters of the obstetric art; with a variety of interesting and valuable matters, derived from numerous sources, and these often of difficult access; the volume of Dr. Churchill will, we are convinced, obtain not merely a place in the library of every physician engaged in the practice of midwifery, but will lie constantly upon his table ready for frequent reference.

The notes and addenda of Dr. Huston are in general, valuable, and invariably constitute a useful addition to the work.

We have already referred more than once to the pictorial illustrations; these are really beautiful as works of art, and give to the student a correct idea of the descriptions in the text, which, notwithstanding they are throughout remarkably clear and explicit, would, to the beginner, without

the illustrative engravings, convey but indistinct ideas of the subjects to which they refer. D. F. C.

ART. XII.—*Principles of Human Physiology, with their chief applications to Pathology, Hygiene, and Forensic Medicine. Especially designed for the use of Students. With over one hundred illustrations.* By WILLIAM B. CARPENTER, M. D. &c. First American edition, with additions by the author, and notes and additions, by MEREDITH CLYMER, M. D., &c.: 8vo. pp. 618. Philadelphia: Lea & Blanchard, 1843.

THE rapid multiplication of treatises on physiology, within a few years past, is an unquestionable evidence of the increased attention which the science has received of late, more especially on the part of the medical profession, and of its acknowledged importance as the only foundation upon which can be built a correct theory of the nature and causes of the morbid changes that occur in the functions and organization of the human body. How far "the making of many books" is calculated to increase our acquaintance with the true principles of physiology is a question with which we have at present nothing to do, our only duty, as reviewers, being to examine into the merits of the several treatises as they successively appear. New works on physiology would, however, seem to be more frequently demanded than upon almost any other of the natural sciences. Its cultivators commenced to theorize long before they learned to observe, and hence every new accession of facts, or of supposed facts, was made the excuse for the erection of a new theory, which was scarcely announced before it required to be modified by the results of more recent discoveries—and even now, the rapid progress of the science, and the numbers actively engaged in its cultivation, demands, that at short intervals, a careful collation should be made of the established facts with the conclusions based upon them; while improvements in the arrangement of the materials already in our possession, and in the manner of teaching the principles of the science unquestionably call also for repeated new publications in relation to it.

The work of Dr. Carpenter is among the latest that has appeared; and though its pretensions are less than many of those that have immediately preceded it, it appears to us to be well calculated to communicate to the student clear and accurate views of the principles and leading facts of human physiology. It is "sufficiently elevated in character" to represent the present condition of the science—"sufficiently compendious" for the limited time at the disposal of most students, and "sufficiently practical in its tendency" to lead its readers to the useful application of the facts and principles it places before them.

We fully agree with the author that the present treatise presents a very fair digest of the latest and most satisfactory information on the subject of which it treats. His endeavour has evidently been "to bring together the valuable facts and principles, scattered through the best of the numerous monographs, that have recently been published on special divisions of physiology and medicine; and to reduce these *disjecta membra* to that

systematic form, which they can only be made rightly to assume when brought into relation to each other, and shown to be subservient to principles of still higher generality." In these endeavours, the author has certainly been very successful—and hence the work is not to be viewed as a mere compilation from preceding treatises, but rather as an original digest of the established facts and principles of physiological science.

The author lays claim to some degree of originality in regard to many of the facts and deductions contained in the volume before us—but especially in relation to the views he has expressed with respect to the relations of instinct and intelligence, and to the location of the former in the ganglia of special sensation;—and to those which relate to the respective functions of fibrin, albumen, and gelatin, as well as to other subjects treated of in the chapter on nutrition. The value of Dr. Carpenter's views on these several points must be tested by future observations.

Our intention, on the present occasion, is not to enter into an examination of the accuracy of the facts or of the various deductions advanced in the treatise of Dr. Carpenter—but rather, to give to our readers some idea of the general character of the work, and of its adaptedness to indoctrinate the student into the principles of human physiology.

The volume is divided into fourteen chapters, which treat respectively of the place of man in the scale of being—of the functions generally, and then of the functions of the nervous system—of sensation and the organs of the senses; of muscular contractility; of voice and speech; influence of the nervous system on the organic functions; of digestion and nutritive absorption; of the circulation; of respiration; of nutrition and of secretion. Then follows a general review of the nutritive process, and the volume closes with an account of reproduction.

On the propriety of this arrangement, which appears to us particularly defective, it is perhaps unnecessary to offer any comment. So intimately connected is each of the systems of organs entering into the composition of the human frame with nearly all the others, that there is some difficulty, in investigating their functions, to determine which it is the most proper and convenient to begin with.

The volume commences with some very sensible remarks upon the connection of physiology with other branches of medicine. The remarks, however, are only general in their character—their applicability to particular cases is developed, as the different vital functions are respectively examined.

The first chapter—embracing the distinction between animals and plants, the general subdivisions of the animal kingdom, with the general characters of each division; of the subdivisions of the vertebrata, and of the subdivisions of the mammalia class of the vertebrata with a general view of their characteristics, forms a very useful and philosophical introduction to the study of the special physiology of the human being.

This latter is introduced by a general view of the vital functions. We quote from this chapter the following passage, in which a position is laid down of much importance in pathology, and although every day becoming more and more fully recognized, is nevertheless not unfrequently still entirely lost sight of, in reasoning upon the nature and character of disease, and the proper therapeutical measures for its removal.

"The activity of a living being, being dependent upon two sets of conditions, the organized structure which it possesses, and the stimuli to which this is ex-

posed, we can scarcely separate from our notion of an organized structure, that of the peculiar properties which it possesses; for we never see an organized structure remaining as such, unless it possess some degree of vitality. It may be said, that, when an animal or plant is killed by a strong electric shock, its organization is unaffected, yet its vital properties are destroyed. Yet no proof of such an operation, which is contrary to all analogy, has ever been afforded. In no other circumstances do we ever witness the departure of vitality, without some change of structure or of composition which can be made evident. In the ordinary *death* of an animal, we may commonly trace the action of the morbific cause upon some particular organ, whose function is thereby either suspended or perverted; and the cessation of the whole train of actions necessarily results, if this organ be one of those essentially concerned in them. Thus, to take a not uncommon case, a patient with tubercular deposition, nearly filling both lungs, becomes the subject of an ulceration, which suddenly opens a passage from one of the bronchiæ to the pleural cavity on one side; death from this cause is frequently almost instantaneous, from the total incapacity of the other lung to maintain by itself those respiratory actions, which are necessary to the continuance of the circulation. Take again, for example, the influence of a narcotic poison; it occasions torpidity, first of the brain, and then of the medulla oblongata. So long as its action is confined to the brain, the general train of vital operations is no more disturbed than it is in profound sleep; but as soon as it affects the medulla oblongata, the respiratory movements become paralyzed (from causes to be hereafter explained) and the circulation is soon brought to a stand; and every organ in the body speedily loses its characteristic properties, by the commencement of chemical changes in its composition. But, if the respiration be artificially sustained, the circulation will continue, and all the processes of nutrition, secretion, &c. to which it is subservient, will be performed with little interruption. Hence, the cessation of the whole train, which would otherwise ensue, and the loss of vitality of the general structure, are due to the local change produced by the morbific cause; and the same may be traced, although not always so evidently, in a variety of other instances."

The remarks made by Dr. Carpenter on the dependence of the operations of mind upon the size and condition of its material instruments, though concise, are particularly pertinent and conclusive. In fact, the whole of this chapter is replete with interest, and affords one of the best general views of the vital functions of the human organism we are acquainted with, and is admirably adapted to prepare the way for their separate and more minute study.

The author's account of the elementary structure and functions of the nervous system, is extremely clear, and corresponds with the results of the latest observations. The section devoted to the comparative anatomy and physiology of the nervous system, is one of a highly interesting character, and cannot be too attentively studied, affording as it does important data for the elucidation of the functions of the nervous system in man.

A very full account is given of the nervous system of the vertebrata. The observations of the author upon the functions of the spinal cord will be found to throw considerable light upon certainly, to the student at least, one of the most complex and difficult parts of physiology.

"The influence of the spinal cord and of its system of nerves, on the movements of respiration, affords an excellent example of the importance of this organ as supplying the conditions immediately requisite for the maintenance of the organic functions. We have seen that, strictly speaking, the act of respiration, as we commonly understand it, is not respiration itself; for, *this* consists in the interchange of ingredients between the blood and the surrounding medium, which is effected in the air cells of the lungs, and which takes place in the lower animals (as in plants) without any muscular effort. But in proportion to the necessity for the energetic exercise of this function, do we find a special

provision in the higher classes for the constant renewal of that portion of the surrounding medium, which is in contact with the aerating surface; and this comes to be so necessary, that asphyxia might be produced, without any interruption to the ingress of air through the trachea, by merely breaking the circle of nervous action through which the movements of respiration are effected. It is an interesting circumstance, however, which shows the provision made in the animal frame to meet its necessities; that a very small portion only of the nervous centres is involved in the action; and that, even in the highest animals, all the rest may be removed, or may be rendered functionally inactive without checking it. This fact, which was ascertained by Legallois, harmonizes well with that which comparative anatomy has brought under our notice; for it has been shown that, in the lowest group of mollusca, but a single ganglion exists; and that this is almost exclusively concerned in regulating the entrance and exit of the currents of water, the most constant office of which is the aeration of the blood."

The influence of the spinal cord in respect to the functions of deglutition and defecation are clearly explained, and with a brief consideration of the protective agency, generally, of the spinal cord, closes the account of its reflex action. The whole is calculated to give to the student a very clear idea of a function of the nervous system, for our knowledge of which we are entirely indebted to the labours of modern and very recent observers. Some judicious remarks are made at the close of the several sections devoted to the examination of this function, upon the leading pathological doctrines which have been developed in it.

The comparative anatomy of the encephalon introduces the reader to the history of its functions; commencing with those of the cephalic nerves. The physiology of the nerves of the sense of smelling, seeing and hearing is given with the author's usual clearness. In regard to the sense of taste, Dr. Carpenter concludes that both the glosso-pharyngeal nerve and the lingual branch of the fifth pair are concerned in it.

"Considering," he remarks, "how nearly allied is the sense of taste to that of touch, and bearing in mind the respective distribution of these two nerves, it does not seem difficult to arrive at the conclusion, that both nerves are concerned in this function; but there seems good reason to believe the glosso-pharyngeal to be exclusively that through which the impressions made by disagreeable substances taken into the mouth are propagated to the medulla oblongata, so as to produce nausea, and to excite efforts to vomit."

An interesting inquiry follows in relation to the much disputed subject, the functions of the par vagum. In regard to its trunk, the author remarks, it must be considered as a nerve of double endowments, conveying to the medulla oblongata the impression produced by venous blood in the capillaries of the lungs, or of carbonic acid in the air cells; which impression may give rise to the respiratory movements, without producing sensation; but, if it be from any cause stronger than usual, the sense of uneasiness which it occasions is very distressing. "Besides the pulmonary impressions, this nerve also conveys to the medulla oblongata those which originate in the mucous surface of the larynx, trachea, and bronchi, as well as those on the lower part of the œsophagus, and on the walls of the stomach. The purpose of these is to stimulate various movements which are performed through the motor portion of the trunk; this excites the actions of the muscles of the pharynx and larynx, of the œsophagus, and in some degree, of the stomach and respiratory tubes."

The influence of a section of both of these nerves upon respiration, is shown to arise from the diminished frequency of the respiratory movements, preventing a sufficient quantity of air being introduced into the

lungs for the due aeration of the blood; and this, according to an established principle in physiology, suspends to a certain extent the circulation of blood in the pulmonary capillaries.

"The congestion of the vessels, induced by insufficient aeration, satisfactorily accounts, not only for the effusion of serum, but also for the tendency to pass into the inflammatory condition sometimes presented by the lungs, as by other organs similarly affected."

Hence, although these nerves are not immediately concerned in the special function of the lungs, they indirectly contribute to its regular and perfect performance. These views are almost exclusively founded upon the very interesting experiments and observations of Dr. Reid.

It appears to be settled by the experiments of Dr. Reid, that the secretion of gastric juice is not, as asserted by Wilson Philip, and subsequent experimenters, dependent on nervous influence supplied by the par vagum, though doubtless in part regulated by it; a position which we advanced and attempted to prove as early as 1818. Neither does it appear that the muscular motions of the stomach are entirely dependent on, though probably in some degree influenced by the par vagum. The entire offices of the nerve, so far as the stomach is concerned, have not as yet, however, been satisfactorily determined. Its influence over the actions of the heart is still involved in obscurity.

In treating of the motor nerves of the orbit, Dr. Carpenter notices the action of the muscles inserted into the ball of the eye. The proper action of the superior oblique, which has been a matter of some dispute, he considers to be to draw the pupil downwards, and a little outwards. This theory of its action, which would be inferred from the manner in which its tendon is inserted, is borne out by experiments both upon the muscle and the nerve which supplies it.

The functions of the encephalon come next under consideration. The author commences this division of his subject with a most interesting inquiry into the special function of the ganglionic enlargements at the upper end of the medulla oblongata; which, with the tracts of gray matter, he considers as subservient to the instinctive actions that are prompted by sensation, but in which there is no indication of volition; and hence that in every nervous trunk there exists at least three sets of fibres, one for reflex actions, another for the instinctive and emotional, and a third for volition. There seems much probability in the suggestions of the author, which are in harmony with what we know of the physiological constitution, so to speak, of the nervous system, and removes some difficulties which have always stood in the way of a satisfactory explanation of the psychical endowments of many of the lower order of animals, and the instinctive actions of man.

In regard to the functions of the cerebellum, Dr. Carpenter appears inclined to adopt the views of Flourens and others, as well as, to a certain extent, those of the phrenological school. After a very fair and impartial view of the experiments and pathological facts adduced in support of the opinion which attributes to the cerebellum the office solely of regulator of the motor function, and the arguments adduced, on the other hand, to prove that it is entirely devoted to the sexual instinct; Dr. Carpenter concludes as follows:—

"The author is far from denying *in toto* that any peculiar connection exists between the cerebellum and the genital system; but if the evidence at present

adduced in support of the phrenological position be held sufficient to establish it, in defiance of so many opposing considerations, we must bid adieu to all safe reasoning in physiology. The weight of testimony appears to him to be quite decided in regard to the connection of the cerebellum with the regulation of the motor function. How far this invalidates the *moderate* phrenological view, which does not regard the function of the cerebellum as *exclusively* devoted to the sexual instinct, is a question well deserving of attention. There is nothing opposed to such an idea in the results of the experiments already adverted to; since there is no evidence that sexual instinct remained after the removal of the cerebellum; but, on the other hand, there is no proof that it was destroyed. A circumstance which has been several times mentioned to him, that great application to gymnastic exercises diminishes for a time the sexual vigour, and even totally suspends desire; seems worthy of consideration in reference to such a view. If the cerebellum be really connected with both kinds of functions, it does not seem unreasonable, that the excessive employment of it upon one should diminish its energy in regard to the other. Further, it would seem by no means improbable, that *the lobes* are specially connected with *the regulation and co-ordination of movements;* whilst *the vermiform processes*, which are very large in many animals in which the former scarcely present themselves, are the parts concerned in the *sexual function*. As an additional argument in favour of the former part of this view, it may be stated, that in man the lobes bear a larger proportion to the vermiform processes than in any other animal; and that they undergo their most rapid development during the first few years of life, when a large number of complex voluntary movements are being learned by experience, and associated by means of the muscular sensations accompanying them; whilst in those animals which have, immediately after birth, the power of regulating their voluntary movements, for definite objects, with the greatest precision, the cerebellum is more fully developed at the time of birth. In both instances it is well formed, and in active operation, so far as can be judged by the amount of circulation through it, long before the sexual instinct manifests itself in any perceptible degree."

The functions of the cerebrum are next considered. Dr. Carpenter inquires first, what may be considered as firmly established in relation to its offices. Which is, that it is the sole instrument of *intelligence*, by which term is implied, the voluntary adaptation of means to ends, in a manner implying a perception of the nature of both:—that it is the organ through which all those impressions are received, which give rise to *voluntary* actions, and that it affords the power of occasioning muscular contraction in obedience to the influence of the will. It is probably the sole organ that ideas of notions of surrounding objects are acquired, and that it is by it these ideas are made the groundwork of mental operations. It would seem, also, to be the exclusive seat of memory.

The remarks of Dr. Carpenter upon the cerebral functions, are marked throughout by all that philosophical candour and caution which are so essential to arriving at correct conclusions on subjects, which, like that of the proper office of the cerebrum, have been and are still the subject of considerable diversity of opinion, and in relation to which hypotheses the most opposite have been advanced, with great confidence, by the most distinguished physiologists. The author appears to favour the idea of the brain being a congeries of organs, each appropriated to a distinct function, but is not prepared to adopt, as certainly correct, the location of these organs adopted by phrenologists; nor as positively established all the general principles which they have advanced.

"Without," he remarks, "wishing to set himself up as an opponent to phrenology, he perfectly agrees with Dr. Holland in thinking, that an impartial view of it requires 'not that the doctrine should be put aside altogether, but that great

abatement should be made of its pretensions as a system.' In particular, he thinks that those who pursue it are bound to make themselves first acquainted with what can be established as the general functions of the brain, before descending to particulars."

The following tabular view is presented of the nervous centres.

CEREBRAL GANGLIA,
the centres of the operations
of *intelligence and will*.

NERVES of *special sensation*.—*Motor fibres* mingled with general motor system.	GANGLIA OF SPECIAL SENSE, the centres of *consensual*, *instinctive*, and *emotional actions*.	NERVES of *special sensation*.—*Motor fibres* mingled with general motor system.

CEREBELLIC GANGLIA,
for *harmonization* of *general muscular actions*.

Afferent and *Motor* NERVES of *Respiration*, *Deglutition*, &c.	RESPIRATORY and STOMATO-GASTRIC GANGLIA.	*Afferent* and *Motor* NERVES of *Respiration*, *Deglutition*, &c.
TRUNKS of SPINAL NERVES, composed of fibres from true Spinal Cord, and from Cerebrum, Cerebellum, and Medulla Oblongata; each group containing afferent and efferent fibres.	Fibrous structure, continuous with Brain. *True* SPINAL CORD, consisting of chain of ganglia, for *Reflex actions* of the *trunk* and *extremities*. Fibrous Structure, continuous with Brain.	TRUNKS of SPINAL NERVES, composed of fibres from true Spinal Cord, and from Cerebrum, Cerebellum, and Medulla Oblongata; each group containing afferent and efferent fibres.

The whole of the author's remarks on the functions of these several nervous centres are marked by great clearness, and we believe are calculated to lead the student to a more correct general knowledge of the complex structure of the nervous system, than he can acquire from any other source. With the correctness of many of the deductions of Dr. Carpenter we are not prepared to agree. There are few of them, however, that are not marked with great probability, and the whole are advanced with a degree of candour, which we are persuaded, will command for them a more close examination than if they had been asserted with a greater degree of dogmatism. To every well established fact in connection with the subject he has given all the attention and all the prominence it deserves.

Chapter four, the several sections of which are devoted to a consideration of sensation in general, and to the organs of the special senses, touch, taste, smell, vision, and hearing, is one of the most satisfactory in the whole volume. Every physiological fact and well established principle in relation to each sense is fairly stated, and in that clear and explicit manner, so essential to the successful teaching of scientific subjects generally.

The subject of muscular contractility, according to the arrangement adopted by the author, is the next in order. The minute structure of muscle is examined with considerable care, and that of man compared with those of the lower animals, especially of the vertebrata. The subject, intricate in itself, is rendered more easy of comprehension by numerous pictoral illustrations. The proper physiology of the muscles is treated with the author's usual precision; well established facts and deductions are clearly stated, and all hypothetical disquisitions carefully avoided.

The true theory of voice, according to Dr. Carpenter may be now considered as fully established, in regard at least to this essential particular—that the *sound*, namely, is the result of the vibrations of the vocal ligaments, which take place according to the same laws with those of metallic or other elastic tongues; and that the pitch of the notes is chiefly governed by the tension of these laminæ. With respect, however, to the modifications produced in the tones by the shape of the air passages, both above and below the larynx; by the force of the blast, and by other concurrent circumstances, little is certainly known.

The whole subject is very ably treated, the author following chiefly the views contained in the paper of Mr. Willis in the Transactions of the Cambridge Philosophical Society, and the fourth book of Müller's Physiology. Of the physiology of articulate sounds, a very short account is given, but perhaps sufficiently long to give to the student an idea of the few leading facts known in relation to it. The subject of vocal sounds in general, whether in reference to language or music, is legitimately within the province of physiology, though altogether out of place in an elementary treatise.

The influence of the nervous system on the organic functions is a subject of great interest, and one upon which there exists a very considerable diversity of opinion. Of the dependence of the muscles of organic life upon nervous influence there can exist but little doubt, and of the latter being concerned, either immediately or remotely, in providing the conditions under which alone the organic functions can be performed, is unquestionably an established physiological fact; but in what manner, or to how great an extent, the functions of circulation, respiration, digestion, nutrition and secretion are dependent upon nervous influence may be considered as questions still undecided.

The views of Dr. Carpenter in relation to the sympathetic system of nerves, which are the special nerves of the organic functions, are mainly identical with those advocated by Müller. That the sympathetic nerves namely, are composed of cerebro-spinal filaments, and a system of gray fibres, which, in all probability, have an immediate action upon the molecular changes which constitute the functions of nutrition, secretion, &c.

"It is only necessary," the author remarks, "to suppose that the white fibres of the sympathetic nerve terminate in the true spinal cord, (which is not itself a centre of sensation), without proceeding to the brain, to have an explanation of the absence of sensory endowments in the organs to which they are distributed, and of the complete removal of the muscles supplied by their motor nerves, from voluntary control. That a few fibres, of which the actions cannot be excited under ordinary circumstances, pass on to the brain, would seem probable, from the fact of the sensibility of some parts in disease, which are totally insensible in their normal condition."

In regard to the supposed sympathetic action of the so termed sympathetic nerve, Dr. Carpenter observes:—

"It appears, that it may be stated as a general proposition, that all the evident movements which can be excited by irritation, applied to one part of the body, in the contractile organs or tissues of another, are really affected through the true spinal cord, whether the contractile organ be a powerful muscle, or a thin and feeble layer of fibres around a blood-vessel or duct. Upon the reasons why the fibres of the visceral nerves should be so peculiarly separated from the rest, we can at present only speculate; but it may not be considered improbable that, by their peculiar plexiform arrangement in the various ganglia through which they pass, connections are established between remote organs, which tend to bring their actions into closer relation with each other than would otherwise be the case. The existence of such connections, for the purpose of harmonizing the several movements of the viscera which are concerned in the various and complex operations of digestion and its attendant processes, may be inferred from the perfect conformity which exists between them, during all their different states of regular action; and still more, perhaps, from the phenomena of their disordered conditions."

Dr. Carpenter considers that we have no valid reason to believe that any of the processes of nutrition and secretion are dependent upon any kind or degree of nervous agency. These processes, he remarks, go on with great rapidity and energy in the vegetable kingdom, in which nothing approaching to a nervous system exists, and in the animal kingdom they take place with equal vigour long before the least vestige of it appears. Moreover, there is abundant evidence that secretion may take place after the death of the general system, through the persistence of certain molecular changes, of which the essential conditions are not immediately altered; and the growth of the beard, which has also been occasionally observed, indicates that even nutrition may continue to a certain degree.

The author, however, admits as indisputable, that many of the organic functions *are directly influenced* by the nervous system; but that this influence, exerted sometimes in exciting, sometimes in checking, and sometimes in otherwise modifying them, is rather a directing or controlling influence than one essential to the performance of the functions referred to, and "may well be compared to that which the hand and heel of the rider have upon his horse, or the engine driver exerts over a locomotive."

This controlling or directing influence of the nervous system upon certain of the organic functions is examined in detail—as it is exerted in depressing or exciting their action.

The consideration of the organic functions commences with those of digestion and absorption. Upon the first of these subjects the more recent facts and deductions will be found very fully and clearly detailed. The author assumes the purely chemical views advanced by the more recent physiologists, which are unquestionably correct so far as they go—but that digestion, whether in the stomach or intestines, is solely performed by chemical agency, is a doctrine which appears to us to want additional facts for its confirmation. The general conclusions of the author are:—

"1. That, by the operation of the gastric fluid, the azotized principles of the food, whether animal or vegetable, are dissolved in the stomach, and are converted into albumen. 2. That the saccharine principles undergo a further change in the duodenum, by which they are partly converted into albumen, and partly into oleaginous matter; and that they are absorbed by the lacteals of the intestines in one of these two states. 3. That the oleaginous principles are either converted into albumen, or are absorbed without alteration. 4. That—with the exception of certain mineral substances—matters which cannot be reduced to either of these forms, are rejected as excrementitious."

In regard to lacteal absorption Dr. Carpenter adopts a view which we

advanced and attempted to establish upwards of twenty-five years ago, namely, that the lacteals have in some degree the power of *selecting* the particles of which the chyle is composed; and that, whilst they take up such a proportion of each class of alimentary materials, as will rightly blend with the rest in the nutritious fluid, they reject not only the remainder, but also—for the most part at least—any other ingredients which may be contained in the fluid of the intestines.

"Such may be stated as the general result of the experiments that have been made to determine their function; though it is unquestionable, that extraneous substances, especially of a saline nature, occasionally find their way into this system of vessels. This may not improbably be due to a correspondence in the size and form of the ultimate particles of such substances, with those of the materials normally absorbed by the lacteals. Experiments upon the function of absorption in plants, whose radical vessels have a corresponding power of *selection*, appear likely to assist in elucidating this interesting subject. By the experiments of Dr. Daubeny it has been ascertained, that if a plant absorb any particular saline compound, it can also be made to absorb those which are *isomorphous* with it, though it will reject most others."

We are pleased to find the author giving his sanction to the opinion that the lymph, like the chyle, is a nutritious fluid, and not of an excrementitious character, as was formerly supposed. There is an evident conformity in the nature of the two fluids, with this exception, that the chyle contains a much larger *proportion* of assimilable substances—albumen, fibrin and fatty matter; the nature and amount of the less clearly defined animal principles, and of the saline ingredients, appear to be nearly identical in both.

"Hence it can scarcely be doubted that, to use Dr. Prout's expression 'a sort of digestion is carried on in all parts of the body.' That a part of the products of interstitial decomposition may be subsequently assimilated appears indisputable; for in no other way can we account for the fact, that animals may live for a time on their own solids. This is particularly evident in the case of hybernating animals, which retire to their winter quarters loaded with fat, and come forth quite lean in the spring; and in such cases we must believe, not only that the lymphatics select from the products of spontaneous decomposition those which are fit to be again assimilated, but that an actual change is effected in the fatty matter, by means of some action of the fluids upon it, which prepares it to be thus absorbed."

Many years ago we advanced precisely the same views, which were then received with not a little ridicule.

Some highly interesting, and very important facts and conclusions are contained in the section which treats of the supply of food required by man. In the correctness of a few of the conclusions we do not, however, entirely coincide. The subject of diet, as well in regard to the kind as to the amount of food necessary for the support of the health and vigour of man, is a somewhat complex one; as the circumstances of climate, nature and amount of occupation, habit, temperament, and state of health must all be taken into consideration in order to arrive at a correct conclusion, whereas by too many of the writers who treat of it, it is considered only in one point of view, and an attempt has even been made to determine a quality and amount of diet invariably adapted for the animal man. There are, unquestionably, certain general principles, connected with this subject, which are tolerably well settled, and are almost universally applicable, but details can be settled only by a reference to individual cases.

In treating of the subject of the circulation, the author denies that there is any ground for the assumption that the *capillaries* form a distinct set of

vessels in which the arteries terminate and the veins arise; or that they are in any respect different, except in size, from the other vessels. He also calls in question the correctness of the supposition, that nutrition can only be carried on by means of capillary vessels—it appearing from the late researches of Mr. Toynbee, that cartilages in general, the cornea, crystalline lens, and vitreous humour, together with the epidermoid appendages, are entirely destitute of them.

A very able section is given in relation to the action of the heart. On the important and much disputed question, the causes, namely, which influence the circulation in the arteries and capillaries, the views advanced by the author are ingenious, and borne out by striking analogies drawn from the physiology of vegetables and the lower classes of animals. He favours the idea of the independent circulation, at least to a certain extent, of the capillary vessels, or, in other words, that "the capillaries possess a *distributive* power over the blood, regulating the local circulation, independently of the central organ, in obedience to the necessities of each part." (*Palmer*) The whole of this section is deserving of a very close examination. The whole chapter on the circulation is a very able one. The same remark may be made in reference to the ensuing chapter, on respiration, the account of which function is full and clear, and the several views advanced in relation to it are in strict accordance with recent observations and experiments.

The chapter on nutrition is a highly important one. Until very recently everything in relation to the physiology of nutrition was little better than mere vague conjecture; but few well ascertained facts had been developed in relation to it, and upon these were erected hypotheses which promised much, but explained nothing. To the researches of contemporary physiologists we are, however, indebted for many important discoveries in regard to the ultimate structure of the solids, and the organizable principles of the blood, which throw very considerable light upon the manner in which the various structures of the animal frame are built up, and unorganized converted into organized matter.

In the several sections of the chapter before us devoted to a consideration of the organizable principles of the blood, the formation of cells, the elaboration of chyle and lymph, the physical and vital properties of the blood, the pathological changes in the blood, and the origin and formation of the solid tissues, the student will acquire a very correct idea of all the facts connected with the subject of nutrition—and the general deductions to which they lead. The whole chapter demands a very close study, in order to a full comprehension of the various points involved in the investigation of the nature and mode of the ultimate structure of organized matter. We had marked several paragraphs expressing the particular views of Dr. Carpenter, for extraction; but found that in order to render them perfectly intelligible, and to do full justice to the author and to our readers, those extracts would necessarily be more extensive than would be compatible with our limits—we must content ourselves, therefore, with merely recommending the chapter to the attention of such as desire to become acquainted with a subject, than which to the physiologist, and pathologist, there is none more replete with interest—none calculated, in its ultimate developments, to lead to more important results in reference to the more obscure laws of human biology.

Intimately connected with the subject of nutrition is that of secretion,

which is next considered—including under the general term, that of secretion proper, or the separation from the blood of certain of its constituents to subserve particular objects by their retention within the system, and excretion or the separation of certain substances from the blood, the retention of which would be positively injurious.

We quote the following sentence as well as a specimen of the author's manner of treating the subject, as from its containing within a small compass a very clear exposition of the nature of every secreting organ throughout the animal economy.

"Of the reason why certain compounds forming part of the circulating blood, are separated from it by one organ, and others by a different one, nothing whatever is known; and there is nothing in the evident structure of those organs that can afford any clue to the attainment of such knowledge. When their ultimate structure is considered, it is found to be neither more nor less than a vascular membrane; made up into various forms for convenience of packing. Of such a membrane, in its most expanded state, that which composes the walls of the serous cavities, or of the synovial capsules, affords a good example; and the fluid which these cavities contain is secreted by it. Of mucous membrane the structure is in some instances almost equally simple; but in general the secreting surface is extended into a large number of little open sacs or follicles, which are copiously supplied with blood-vessels, and are equally concerned with the external superficies, in the elaboration of the protective secretion that covers those membranes. In the most complex form of gland, we find nothing but a very obvious modification of this structure. Either the sacs are prolonged in cœca or blind tubes, as is the case in the human kidney and testis; or they are very greatly multiplied, and are clustered together—just like currants upon a stalk—upon efferent ducts common to several of them, as is seen in the parotid. Now that the particular modification of structure which the gland may present, has no essential connection with the character of the secretion it is destined to form, is evident from this circumstance,—that almost every gland may be found under a variety of forms, in different parts of the animal series."

Dr. Carpenter adopts the more generally received opinion; an opinion borne out by the recent experiments of Kiernan; that the bile is secreted entirely from the blood of the portal veins. Of the use of the bile, the author considers the most probable opinion to be, that besides its agency as a precipitant in separating the nutritious from the useless portion of the chyme, it is destined to remove from the blood its superfluous hydro-carbon, whether this has been absorbed as such from the aliment, or has been taken up by the blood as effete matter, during the course of the circulation. The presence of azote in picromel, however, shows that some of the effete azotized compounds also are got rid of in this manner.

In regard to the urinary secretion Dr. Carpenter believes that, there can be no doubt its chief purpose is to remove from the system the effete azotized matters which the blood takes up in the course of the circulation, or which may have been produced by the changes occurring in itself. This appears to be evident, from the large proportion of nitrogen, which is contained in the solid matter dissolved in it, and from the crystalline form presented by this solid matter when separated,—a form which indicates that its state of combination is such as to prevent it from conducing to the nutrition of the system.

The subject of the several secretions and excretions is treated with the author's usual ability. The structure of the various glands and glandular organs is minutely detailed—the chemical composition of the secreted and excreted fluids is given according to the latest and most authentic analyses,

and the general physiology of the whole subject very clearly elucidated. At the close of the chapter the author notices the various bodies, as the spleen, supra-renal capsules, and the thymus, and thyroid glands, which from their having a somewhat glandular aspect, are usually ranked among the secreting organs; but which have neither excretory ducts, nor any thing that can be considered as truly glandular in their structure. Upon the real office performed by these bodies, nothing certain is known; from the various conjectures as to their uses in the animal economy, Dr. Carpenter adopts what appears to him to be most probable. The theory of the operation of the spleen, the most satisfactory in his opinion is that advanced by Dr. Rush, which regards it as a sort of diverticulum or reservoir, which may serve to relieve the portal system from undue distension, under a great variety of circumstances. As to the supra-renal capsules, he considers that the only use that can be assigned to them, with any probability, is that of serving as a means of conveying into the veins the blood transmitted through the renal artery, when from any cause the secreting function of the kidneys is partially or entirely destroyed, and their capillary circulation in consequence stagnated. It would be easy to test the correctness of this supposition by the results of pathological anatomy. The author, although he admits that, at present, the question of the specific use of the thymus body must be left in uncertainty, seems favourable to the notion of Mr. Tyson, that the office of the thymus is to receive during fœtal life the blood which is afterwards sent to the lungs—a certainly not very probable idea, more particularly, as, according to the author's own admission, the body continues to grow after birth, and remains of considerable size during the first year. After the latter period, in common with the generally received opinion, Dr. C. remarks, "it gradually diminishes, and wholly disappears about the time of puberty." We have reason to believe that this disappearance does not generally take place; we have certainly observed the gland of very considerable size in the adult, and if credit is to be given to the statements of Krause, this is very generally the case; he declares that he has found it in almost all individuals between twenty and thirty years; and very often *larger* than in young children,—and he has seen it of considerable size between the ages of thirty and fifty. In the early part of adult life it is generally divided into two parts, as in the fœtus; these commonly adhere by cellular tissue. The lower cornua never, as in children, descend to the upper part of the pericardium, but frequently very low down upon the neck. He gives the following as the admeasurement of the thymus gland in some very healthy and well made individuals who had committed suicide:

In a male 25 years old, it was 34 lines long; 18.25 broad, 4 thick, weighing 292.5 grs; in volume 0.977 cubic inches, and in specific gravity 1.0352.

In a male 25 years old, it was 42 lines long; 32 broad, 2.3 thick, weighing 380.3 grs.; in volume 1.156 cubic inches, and in specific gravity 1.0311.

In a male 20 years old, it was in weight 356.5 grs.; in volume 1.085 cubic inches, and in specific gravity 1.0309.

In a female 28 years old, it was 22 lines long; 16 broad, 2 thick, weighing 69.2 grs.; in volume 0.211, and in specific gravity 1.0267.

Dr. Roberts of New York gives the result of the examination of the thymus at birth in six full grown children—the length varied from 12 to

nearly 36 lines; the breadth from 12 to 30 lines; the thickness from 5 to 6 lines, and its weight from 80 to 360 grs. The uses of the thyroid are not even conjectured.

The subject of animal heat is next considered. The views adopted by the author, in relation to the manner in which the temperature of the human body is produced and maintained are those that appear to be most in accordance with the best established facts, and the various vital phenomena both in health and disease.

The volume concludes with the consideration of the function of reproduction—the facts in relation to which are examined with great minuteness and care. The author adopts the doctrine of fecundation being the result of the action upon the female ova of the spermatozoa of the male semen, which find their way through the fallopian tubes to the ovaries.

We have now closed a very superficial notice of the valuable work of Dr. Carpenter. It contains one of the best summaries of the Principles of Human Physiology that has yet appeared. The author has taken particular care to discriminate between the doubtful and positive facts, and hypothetical and legitimate conclusions, in reference to every subject embraced in the science of which he treats—while, at the same time, he has endeavoured to assign to each fact and inference its due importance in the establishment of general physiological doctrines. To the student it will form a valuable manual; particularly to the student of medicine, the pathological applications of the various physiological facts and principles being in most cases indicated with considerable judgment. The leading characteristics of the present treatise were pointed out in the commencement of this notice. Dr. Carpenter has a very happy facility of making each subject of which he treats perfectly clear and comprehensible—showing, in all cases, the direct application of the facts he relates, and, admitting their truth, the probable or positive inference that results from them; a most important recommendation in every work prepared for the use of students. A somewhat different arrangement of the subjects would probably have been preferable to that adopted, but this is after all mere matter of opinion. The text is illustrated by pictoral diagrams wherever this mode of illustration could with propriety be adopted.

The additions of the editor, Dr. Clymer, are numerous and invariably pertinent—adding to the text of the author whatever has been derived from the daily improvements in physiology. and to his positions new illustrations. Dr. Clymer, at the request of the author, has incorporated in this edition, the able report of the latter on the physiology of cells, published in the British and Foreign Medical Review for January, 1843.

To such of the members of our profession who desire to become acquainted with the present state of physiology generally, or upon any particular subject, but cannot spare the time to consult the various monographs that have appeared within a few years, the present volume is recommended as well adapted to afford them the requisite information.

D. F. C.

BIBLIOGRAPHICAL NOTICES.

ART. XIII.—*Special Anatomy and Histology.* By WILLIAM E. HORNER, M. D., &c., in two volumes—Sixth Edition. Philadelphia, 1843.

ANOTHER edition of this standard work of Professor Horner has made its appearance, to which many additions have been made, and upon which much labour has been bestowed by its author. The additions are chiefly in the department of Histology or elementary anatomy, and so important are they, that the Professor has added the term to the title of his work.

Under the head of the chemical constituents of the body, are enumerated the various newly discovered compound organic radicals and their combinations, as for instance, proteine, albumen, caseine, fibrine, pepsine, globuline, &c., a short account of the properties of each being given.

The chapter on Histogeny, or the origin and growth of elementary organisms, contains a full account of the origin and formation of tissues by means of cell-germs, nuclei and nucleated cells, as well as a description of the elementary parts which make up the body of animals, as chondrine, pyine, hematine, &c.

Before commencing the special description of any particular tissue, the Professor gives a chapter on its general anatomy. This part of the work has received the greatest attention, and much of it may be said to be re-written; the late discoveries by the microscope rendering such a measure necessary.

There are some parts of the work in which a strong disposition is manifested to adhere to the old descriptions, *not* however, to the exclusion of the later and more perfect views of the part described. For instance, the rete mucosum is still described as possessing four layers, viz. 1. the bloody pimples; 2. the tunica albida profunda; 3. the gemmula; and 4. the tunica albida superficialis;—which have been studied chiefly by means of examinations of the skin in diseased conditions, as for instance in the small-pox pustule, rendering it probable *at least* that they are the results of diseased action, and not the true structure of the part in a normal state. Professor H., however, adds a brief account of the more recent researches of Messrs. Breschet and de Vauzeme, upon which, however, he seems to place but little reliance.

In describing the filaments which may be seen in the interval between the two tissues, on separating the cuticle from the cutis-vera after maceration, we perceive that the explanation given in a former edition is still adhered to, although they are readily seen to be due to an elongation of the *papillæ tactus* of the derm in consequence of an adhesion between their tips and the cuticle. When pulled entirely apart, their tips break off, and adhering to the cuticular portion form what Gaultier calls the layer of bloody pimples.

The chapter on the general anatomy of the muscular system is full and complete, and gives an excellent view of the present state of our knowledge on the subject.

The account of the minute anatomy of the mucous membrane has claimed a very large share of the author's attention, and it is a subject which he has deeply studied and most splendidly illustrated by a series of minute injections, which are placed in the Wistar Museum.

His account of the mucous membrane appeared in this journal in advance of the researches of Sprott Boyd, but seems, as usual, to have excited but little attention from our transatlantic brethren. His estimate of the number of follicles, which we are confident is *within* the mark, will go far to make the student understand how the slight affections of the mucous membrane so readily and so rapidly affect the general system. The calculation (p. 51, vol. 2) gives to the

stomach 1,296,000, and to the colon 9,620,000. The whole number of follicles in the alimentary canal being estimated at plus 46,900,000.

The researches of the author led him some time since to adopt a description of the structure of the lung which differed widely from that of any previous anatomist, although he says, vol. 2, p. 161, that it "may be traced as far back as Helvetius and Duverney, and has as its advocates, Haller, Sœmmering, J. F. Meckel and Cruveilhier."

Every part of this edition seems to have undergone the most careful revision, and its readers may rest assured of having the science of human anatomy fully brought up to the present day, in these volumes.

An additional advantage is promised in an accompanying atlas of illustrations, without which no work on demonstrative science ought to appear, and it would be much better to have them on the same page as the description. P. B. G.

ART. XIV.—*The Dispensatory of the United States of America.* By GEORGE B. WOOD, M. D., Professor of Materia Medica in the University of Pennsylvania, &c., and FRANKLIN BACHE, M. D., Professor of Chemistry in Jefferson Medical College of Philadelphia, &c. Fifth edition, enlarged and carefully revised. 1 vol. 8vo., pp. 1368. Grigg & Elliot, 1843.

DURING the ten years that have elapsed since the first edition of this work, the exceeding high estimation in which it is held by the medical and pharmaceutical public, has been evinced by the constant demand for it, and the rapid disposal it has met with.

Previous to its appearance, the state of pharmacological knowledge in this country was so impoverished and barren, in consequence of the paucity and meagreness of systematic treatises, which were far behind the age, not only with respect to scientific details, but really important practical discoveries, that at the time of its publication, the *United States Dispensatory* might almost be regarded in the light of a revelation, and in conjunction with the valuable auxiliaries, periodical, and others which have since been associated with it, it has contributed to dispel the ignorance, apathy, and indifference that depressed one of the most extensive and necessary departments of medical science. To institute, however, a comparison between the condition of American pharmacology during two distinctly marked eras that have been under our immediate observation, would be an extended occupation; we wish only to refer to such epochs connected with its history, in noticing a work which is inseparable from the agencies that gave rise to reformation, and which has largely conduced to awaken a taste for the cultivation of the materia medica, and to demonstrate its capabilities. The indefatigable authors have laboured assiduously in the field to which they have devoted themselves; and it will be admitted, that it is no disparagement to other meritorious individuals, to assert, that they have done more than a mere share to render fertile the waste and unproductive places.

In each succeeding edition of the Dispensatory, the work has been rendered a full compendium of the existing information; improvements and alterations have been introduced, and a jealous vigilance has been exercised with respect to additions and discoveries in science at home and abroad; but it is stated in the preface to this, the fifth edition, that "on no revision have the authors bestowed so much labour as on the present," and the following reasons have been given: The new editions of the United States and Edinburgh Pharmacopœias required comment; and the recent pharmacological treatises of Dr. Pereira and Dr. Christison, containing much original observation, and the Medical Flora of Dr. Lindley, not to speak of other valuable works in different departments of materia medica and pharmacy, afforded a great mass of new materials for selection and arrangement. The periodical press has also presented much that demanded notice, and the changes in the commerce in drugs, and the various modifications in pharmaceutical operations, resulting from increased experience and the ad-

vancement of science, called for careful personal examination and inquiry. It appears that the materials have so far increased, that even "by pruning redundances and concentrating the new matter within the smallest possible space, the authors have been compelled to exceed the former limits by more than one hundred pages."

The method and arrangement of the United States Dispensatory are too familiar to require *their being detailed*; the same divisions have been introduced into this as in former revisions. The changes that have been made, consist of new information with regard to the articles of the materia medica, with additional accounts of medicinal substances; the improvements which preparations have undergone in their modes of formation; an exposition of such as have been recently introduced; and lastly, the improvements in pharmaceutical processes. It would be impossible, except in an elaborate analysis, to present all the particulars in which alteration is apparent; it will be sufficient to state, extension is given to our knowledge upon most of the important subjects, among which we may notice aloes, catechu, cinchona, conium, ergot, gamboge, iodine, kino, lobelia, maranta, opium, &c. &c. Some of the more recently introduced drugs, have been placed in the body of the work, while others of minor importance have been described in the appendix; a similar disposal has been made of new preparations as they have been made officinal or otherwise; and among the pharmaceutical operations we were pleased to see a more full account of the method by displacement. This book has done a great deal to exalt the scientific reputation of our country abroad, while its career has been one of honour and usefulness at home; our interests are united in the continuance of its success, and we only hope that this may equal its deserts. J. C

ART. XV.—*Mortality of the City of New York. Annual Report of Interments for the year* 1842, *together with a brief view of the Sanatory condition of the city; an exposition of some of the causes of its sickness and mortality, and the suggestion of a few remedial measures for the consideration of the Common Council.* By JOHN H. GRISCOM, M. D., City Inspector.

THIS document, the preparation of which reflects great credit upon Dr. Griscom,—commences with tabular statements, showing the mortality from the different classes of diseases, and each particular disease which proved a source of death in New York during the year past. The whole number of interments reported was, exclusive of still-born, 8,475, being 56 less than in the preceding year. Of this number there were,

White Males, - - - -	4,110	
do Females - - -	3,831	
		7,941
Coloured Males, - - - -	255	
do Females, - - - -	279	
		534
		8,475
Premature and Still-births, - - -		701
Total Interments, - - - - -		9,176

The number of deaths by the *first class of diseases*, (Epidemics,) was 2,320, an increase of about 100 over the preceding year's mortality, from the same causes. In some of the individuals of that class there appears an increase, and in others a decrease from the bill of 1841. Measles gives but little more than one half, Small-Pox 48 less, Scarlet Fever 50 more, Whooping-cough and Typhus (including Typhoid) Fever give an increase, Erysipelas, Diarrhœa and Dysentery a diminution. Under the term *Synocha* are included "bilious," "inflammatory" and "continued" fevers.

The mortality of the last and previous years, by diseases of the *nervous sys-*

tem, appears nearly equal. With regard to the deaths reported as from Delirium Tremens and Intemperance, they cannot be relied on as the whole truth, because many, of which these have been the principal causes, are returned under other diseases, mostly Apoplexy and Consumption. As reported, however, the number of deaths in the last few years, in proportion to the population, exhibits a gratifying decrease.

Under the term *inflammation of brain* are included "congestion of brain;" under *convulsions* are placed "spasms," "fits" and "cramp," and *diseases of brain* includes "softening," "ulceration," "affection" and "irritation."

The number of deaths by diseases of the *respiratory organs* was 2,242, being 232 less than in 1841. Of consumption there died,

White Males,	617,	of whom were under 5 years,	76
do Females,	603,	" " " "	41
Coloured Males,	55,	" " " "	5
do Females,	64,	" " " "	6
	1,339		136

The proportion of these deaths to the whole (omitting still-births and casualties) is as 1 to 6,114.

Of the 1,339 deaths by consumption, 719 only were of natives of the United States, while the great proportion of 600 were of foreign births. A very important inference relative to the liability of inhabitants of this city to this disease, is to be drawn from this fact. Frequent calculations have of late been made of the comparative obnoxiousness to it, of the citizens of Boston, Philadelphia, and New York. The last, made in Boston,* gives the following average of the deaths by consumption to the whole number of deaths:

In Boston,	1 in 6,185
In Philadelphia,	1 in 7,003
In New York,	1 in 5,547

The returns of 1842, however, show the proportion here to be as above stated, 1 in 6,114; or, if we include the accidental deaths, only 1 in 6,329, which gives a proportion rather better than the average of Boston.

In his attempts to explain the high rate of mortality in New York from consumption, Dr. Griscom lays great stress upon the very large proportion of foreigners there congregated, many of whom arrive in the most destitute condition, and live in the most squalid poverty, circumstances which invite disease, and especially fevers and diseases of the lungs.

"Living with their acquaintance awhile in crowded apartments, in cellars, in crumbling tenements, and narrow courts and streets, and upon food poor in quality, and stinted in quantity, they are peculiarly exposed to inroads of disease, and to none more than consumption. These causes are not peculiar to New York. Its climate, the least of all, perhaps, aids in the work of destruction. The same result would ensue, upon the same aggregation of causes and material, in any other place, and it cannot justly be charged upon any insalubrious peculiarity of its geographical position, its soil, or meteorological qualities. Whence comes the great mortality by consumption of 410 natives of Ireland, as shown in the bill, *more than two thirds the number of white natives*, if not from the combined influences of mental, moral, and physical degradation and depression, incidental to their change of country, climate, habits and associations? The means are not at hand for estimating the proportion of foreigners *resident* in Boston or Philadelphia, nor indeed in this city; but the different relations of the three places indicate very plainly the greater burden of New York in this respect.†

The number of deaths reported under the head of diseases of the *digestive organs*, shows diminution of nearly 200 from the amount of the previous year.

* Statistics of Pulmonary Consumption in the cities of Boston, New York and Philadelphia, for 30 years, with Remarks, by George Hayward, M. D., *N. E. Quart. Journ. Med. and Surg., Jan.* 1843.

† The relative proportions of this class of residents may be inferred from the following

The greatest mortality under this general head was from *inflammation of the stomach and bowels*, and *marasmus*. The last named infantile affection embraces one third of the whole mortality from diseases of the digestive organs, nearly all the deaths having taken place under the fifth year.

The classification and arrangement of diseases adopted by Dr. Griscom, is very similar to that followed by the Registrar-General of England, in his annual reports of that kingdom, extended notices of which interesting documents have been frequently given in the previous numbers of the American Journal of the Medical Sciences.

In addition to specifying the several causes of death, Dr. Griscom gives us in his tables a separate statement of the mortality of the whites and blacks, male and female, the months in which the deaths occurred; together with the ages, and places of nativity of the deceased. Of the total interments, the distribution through the several months was as follows:—

January,	927	May,	686	September,	803
February,	767	June,	611	October,	770
March,	787	July,	873	November,	605
April,	743	August,	931	December,	673

The different ages under which the deaths are registered, are as follows:—

Under 1 year,	2098	20 to 30 years,	970	70 to 80 years,	187
1 to 2 years,	1088	30 to 40 years,	977	80 to 90 years,	82
2 to 5 years,	937	40 to 50 years,	615	90 to 100 years,	21
5 to 10 years,	381	50 to 60 years,	347	100 years and upwards,	4
10 to 20 years,	351	60 to 70 years,	313		

Of those who died, there were born in

United States,	6,222	France,	54
British Provinces, &c.,	30	Other parts of Europe,	51
West Indies,	26	Africa,	2
Ireland,	1,250	At Sea,	2
Great Britain,	413	Unknown,	199
Germany,	226		

The distribution of the white population of the city of New York, according to the U. S. Census returns of 1840, together with the ratios of the white mortality at different periods of life in 1842, are given in the following table.

White Males.	No.	Deaths	Proportion.	White Females.	No.	Deaths	Proportion.
Under 5 years,	23,779	2,123	or 1 in 11	Under 5 years,	24,174	1,841	or 1 in 13
Between 5 and 10,	15,619	189	" 82	Between 5 and 10,	16,865	171	" 98
" 10 " 20,	26,012	146	" 178	" 10 " 20,	31,676	174	" 182
" 20 " 30,	37,518	390	" 96	" 20 " 30,	42,862	499	" 85
" 30 " 40,	26,019	446	" 58	" 30 " 40,	23 358	430	" 54
" 40 " 50,	11,282	330	" 34	" 40 " 50,	11,395	219	" 52
" 50 " 60,	4,850	171	" 28	" 50 " 60,	6,019	147	" 40
" 60 " 70,	2,260	143	" 15	" 60 " 70,	3,192	149	" 21
" 70 " 80,	750	77	" 9	" 70 " 80,	1,262	102	" 12
" 80 " 90,	175	33	" 5	" 80 " 90,	327	53	" 6
" 90 " 100,	27	8	" 3	" 90 " 100,	45	10	" 4
" 100 and upd.	3	1	" 3	" 100 and upd.	4	1	" 4
Total, Males,	148,294	4,057	or 1 in 36½ of the male population.	Total, Females,	161,179	3,726	or 1 in 42½ of the female population.

extract from the returns made to the U. S. Secretary of State, of the number of "Passengers who arrived in the United States, 1840"

	Boston.	Philadelphia.	New York.
1st quarter,	153	32	3,951
2d do	1,645	1,914	27,310
3d do	2,445	1,808	22,526
4th do	1,118	325	6,822
Total,	5,361	4,079	60,609

In 1842, 74,949 passengers arrived at the Port of New York.

One of the main objects of the enumerations and investigations furnished through the labours of the inspectors of public health, is the discovery of the causes of increased mortality with a view to their removal or correction. Among the most serious agencies operating to increase the general mortality, Dr. Griscom refers to the *crowded condition, with insufficient ventilation of a great number of the dwellings of the city.* In computing the number of the population of New York unfavourably situated in cellars, courts, and rear buildings, he makes the following statement:—

"Assuming the average number in each family to be *four*, we have a total, of dwellers in alleys, courts and cellars, of 33,668.* Many of these back places are so constructed, as to cut off all circulation of air—the line of houses being across the entrance—forming a *cul de sac*, while those in which the line is parallel with, and at one side of the entrance, are rather more favourably situated, but still excluded from any general visitation of air in currents.

"With regard to the influence of these localities upon the health and lives of the inmates, there is, there can be, no dispute; but few are aware of the dreadful extent of the disease and suffering to be found in them. In the damp, dark and chilly cellars, fever, rheumatism, contagious and inflammatory disorders, affections of the lungs, skin and eyes, and numerous others, are rife, and too often successfully combat the skill of the physician and the benevolence of strangers. I speak now of the influence of the *locality* merely. The degraded habits of life, the filth, the degenerate morals, the confined and crowded apartments, and insufficient food, of those who live in more elevated rooms, comparatively beyond the reach of the exhalations of the soil, engender a different train of diseases, sufficiently distressing to contemplate; but the addition to all these causes of the foul influences of the incessant moisture, and more confined air, of under-ground rooms, is productive of evils which humanity cannot regard without shuddering.

"Abundant evidence of the influence of residence in cellars upon susceptibility to disease, might be adduced. Of the bilious typhus fever, which prevailed in this city in the summer and autumn of 1820, known as the "*Banker-street Fever*," the following facts are stated by Dr. Pennel, in an essay, published the following year:

"'Out of the whole number of blacks in this district, viz. 562, 119 lived in cellars, of whom 54 were sick of the prevailing fever, 24 of whom died at their homes; while, of the remaining number of black inhabitants, viz. 443, 101 were sick, of whom 46 died at their homes. From which it appears that out of 443 who were better lodged, only 101 were sick of this disease; while, out of 119 living in unwholesome *cellars*, that *nearly one half were taken down with the disease*, and that nearly one half of that number died at their places of dwelling.'

"'Out of 48 blacks, living in 10 cellars, 33 were sick, of whom 14 died; while, of 120 whites, living *immediately over their heads* in the *apartments of the same houses, not one* even had the fever.'

"The healthful influence of good habits and better localities was 'furthermore confirmed by the fact, that those persons, whether black or white, who lived a becoming and regular life, and did not associate with the dissolute and intemperate, almost always escaped, although inhabiting an adjoining house, and, in some instances, living under the same roof with those who were the victims to it.'"

In the fulfilment of his duties as City Inspector, Dr. Griscom refers to various other causes which exercise an unfavourable influence upon the salubrity of the city, such as the existence of the slaughter-houses, localities not sufficiently drained, etc. etc., after which he proceeds to suggest the measures which he thinks best adapted for the correction or removal of the evils complained of.

G. E.

* The cellar population of Liverpool is said to be 40,000.

ART. XVI.—*A Treatise on Protracted Indigestion, and its consequences, being the application to the Practical Department of Medicine, of the Results of an Inquiry into the Laws of the Vital Functions, addressed by the Author, on his retirement from the Medical Profession, both to the Members of that Profession, and to the well-educated Public, particularly Parents.* By A. P. W. PHILIP, M. D., F. R. S. &c. Philadelphia: Lea and Blanchard, 1843: pp. 240.

IT is always a matter of deep and abiding regret to be called upon to notice the errors of professional brethren; but it is more especially painful to have to record the fact of one, who has enjoyed a distinguished medical reputation, descending to an appeal from his professional peers, to the judgment of the public, which, however intelligent, is necessarily so incompetent to form a correct estimate of his labours and opinions. There is but one excuse for this departure from the high standards of professional character, and we cannot but think, judging from the work above named, that it applies in the present instance: viz, the dotings of a "fond old man" over the cherished offspring of his brain, to which he clings with desperate attachment, long after it has proved unworthy of his care.

There is such an evident want of arrangement, such constant repetitions, and never-ending references to his previously published works, such utter ignorance or concealed knowledge of the writings of others, in which his favourite theories are entirely overthrown, such a tone of self-satisfaction, and easy credulity, manifested throughout, that it is hardly possible to suppose that the author's mind preserves its proper balance. Of one thing, however, we are well convinced; that it is a very safe book to place in the hands of the public, for it is not at all probable that any one will take the trouble to read enough of it, to find out the little valuable information it contains.

The work is divided into a preface, two parts and an appendix. The preface and first part are intended to point out and correct the physiological errors, which our author considers as prevailing in the profession, and which prevent medical men from adopting his views; his object is farther, to instruct the "intelligent public," so that it may compel these refractory individuals to revise their opinions and admit their errors. In view of this laudable undertaking, a number of papers, published at different times in the Philosophical Transactions of the Royal Society of London, and containing these despised doctrines and experiments, are inserted in, and constitute the appendix of some eighty-four pages.

The second part, which forms the body of the book, is devoted more especially "to the consideration of the nature and tendencies of indigestion, when confirmed by continuance, in which state it has, in common language, obtained the name of bilious complaints." They depend, according to our author, upon a "distended liver," which although in itself of little immediate danger to the constitution, because this is an organ of a low degree of vitality, is productive in time, in consequence of its extensive sympathy, of the most fatal diseases prevalent in Great Britain. He considers that this affection is an endemic there, that it is the most hereditary disorder known in that country, occasioned "partly by the hereditary transmission and partly by the changeable nature of the climate," and that from the absence of prominent symptoms in the first stages, it is generally overlooked until it has laid the foundation of incurable diseases, among which, the most common and dangerous, is pulmonary consumption.

"The disease I have been describing," says Dr. Philip, "consists of three distinct stages.

"The first is merely a distended state of the liver and duodenum, and generally slight derangements, chiefly of the alimentary canal, which accompany it; free from danger, and causing but occasional, and, in general, trifling local uneasiness.

"The second stage is distinguished by a general and permanent fret of nerves having supervened, causing varied, and often severe suffering, but still without immediate danger.

"The third and last stage is characterized by an affection of some other vital organ, the brain and spinal marrow at length being so debilitated by the continuance of the nervous fret, that they are no longer capable of supplying sufficient nervous influence for the healthy functions of all the vital organs, and the organ most inclined to disease fails in its functions; and this failure soon runs to failure of structure, in consequence of the debility of the central organs. * * * At different times of life different organs are most disposed to disease; hence it is that pulmonary consumption is frequently the fatal termination of distended liver in early life, palsy and apoplexy in late life; and whenever, after the fret of nerve has become permanent, there is any disposition, from whatever cause, to disease in any particular organ, the state of that organ should be watched with care." P. 128.

The reader will certainly be not a litte startled by the author's opinions relative to pulmonary consumption, of which he will find the general conclusions in the following extract. After stating his reasons for selecting the distended liver as an example of chronic disease, debilitating the brain and spinal marrow by its continuance—these reasons being its great frequency, importance and hereditary character—and also his reasons for choosing "a certain form of pulmonary consumption" as a consequence of this debility of the brain and spinal marrow, Dr. Philip remarks, "The following observations, (relative to the treatment of the last stage of distended liver) then, apply to hereditary pulmonary consumption, in consequence of its always being a secondary disease; while the pulmonary consumption which originates in the lungs themselves is of a very different nature, rarely occurring in this country (Great Britain), and requiring as we have seen a very different plan of treatment, (an immediate change to a warm and more steady climate). But whether the secondary consumption is or is not hereditary, it still requires the same plan of treatment, for the same secondary form of this disease may arise without any hereditary disposition, although this is much less frequently the case. Whether there be an hereditary disposition to weak lungs or not, the permanently distended state of the liver is, in these kingdoms, the cause of the pulmonary disease in at least nineteen out of twenty cases."—P. 143.

Many similar passages might be cited, containing the same views and even more strongly expressed, but we think the above will be sufficient to show the author's opinion of the nature of the disease.

In the treatment of this malady, the object must be to remove the original disease, the distended liver, and thus to restore the functions of the brain, and through it, of the lungs. To effect this, no other means, in the opinion of Dr. P. are to be relied upon, except "minute doses of mercury, given at intervals of eight hours. The dose I have found," says Dr. P., "after many trials, to answer the purpose was either the twentieth part of a grain of calomel, or half a grain of blue pill, which as an alterative is equal, or nearly equal, in power to it, according as one or the other best suited the constitution. The minute dose of calomel is most aperient, but on the whole, I have thought the blue pill is the best alterative."—P. 139.

These minute doses are to be continued, combined with soothing and stomachic medicines, a well-regulated system of diet and exercise, until a favourable effect has been produced; they may be taken for years, if necessary to the restoration and maintenance of health, to which they are rarely prejudicial.

Such, then, are the leading features of the doctrines contained in this treatise. In a practical point of view, the results are important, and will certainly command attention, although they have been laid before the profession in so exceptionable a manner.

C. R. K.

ART. XVI.—*Facts and Arguments on the Transmission of Intellectual and Moral Qualities from Parents to Offspring.* New York. Wiley & Putnam, 1843. 12mo. pp. 191.

IN this little volume we have an attempt to establish by facts and arguments the transmissibility of moral and intellectual qualities from the mother, in particular, to her child, and, as a consequence, to incite to a proper examination of the question, in order that while the physical conformation of the body in general is sought to be improved by marriage with persons in robust health, and with fine constitutions, an increase of the size of the brain may also be aimed at in those portions of it which, phrenologically speaking, are the organs of the moral and intellectual faculties. Upon the mother, chiefly, according to our authoress, does this improvement in the offspring depend, and upon her, therefore, devolves the important duty of so training her own mind by proper courses of study, and of so encouraging the exercise of her moral qualities, that she may bestow upon her child a brain so organized as to be susceptible of the highest moral and intellectual cultivation.

Much interesting and agreeable information is brought forward in the way of facts and illustrations; and in them lies the chief strength of this appeal; for we must confess that there is nothing either very original or cogent in the arguments presented. Indeed, when our authoress attempts to speak upon medical matters she certainly reasons without a just appreciation of facts. Among other things, it appears that she has discovered that in homœopathy, is to be found a remarkable cure for *sterility*, quoting as an evidence the following choice *morceau* from one of the writers on its practical advantages.

"The power which homœopathy exerts over the functions of the uterus, has in a vast number of instances been strikingly exemplified, for by correcting the deranged condition of this organ, *sterility*, which had been considered established, has been completely removed."

Upon the whole, however, this is an entertaining little work, and will well repay perusal. C. R. K.

ART. XVII.—*Elements of Chemistry, including the applications of the science in the Arts. With numerous illustrations.* By THOMAS GRAHAM, F. R. S. L. & E. Professor of Chemistry in University College, London, &c. With notes and additions by ROBERT BRIDGES, M. D., Professor of General and Pharmaceutic Chemistry in the Philadelphia College of Pharmacy, &c. Philadelphia: Lea & Blanchard, 1843.

THE student of Chemistry in this country cannot but be gratified, by the announcement of an American edition of "Graham's Elements," by its enterprising publishers, which places at his disposal another excellent exposition of chemical science, and one which is at least equal, to any other work on the same subject in the English language.

Part first, contains the fundamental doctrines of the science, and embraces "under the heads of Combining Proportions, Atomic Theory, Doctrine of Volumes, Isomorphism, Isomerism, Constitution of Salts and Chemical Affinity," a mass of valuable information. The author's views of classification, which have been adopted by Kane, are also stated at length in this part of the work.

Part second, contains a description of the non-metallic and metallic elements, together with their binary compounds and salts. This portion of the work, while it is amply comprehensive in detail for the purposes of a text book, embraces a more extended view of those substances of importance in the arts, as Sulphuric Acid, Iodine, Carbonate of Soda, Chloride of Lime, etc.; and of the practice of alkalimetry and chlorimetry.

The author has placed the description of the salts of each metal, immediately

following that of its binary compounds, which presents the whole subject at one view, and facilitates reference.

Part third, treats of Organic Chemistry. A condensed account of organic analysis, the doctrine of substitutions of Dumas, the action of ferments, and the molecular theory of organic compounds, are embraced in a prel'minary section. Liebig's method of arrangement under compound radicals has been adopted, which gives greater unity to the subject, and facilitates its study. This part of the work contains much that is new in animal chemistry, and "important conclusions respecting the functions of digestion and respiration, results which are entirely new, and now enter, for the first time, into a systematic work on chemistry."

Under the supervision of its able editor, the text has undergone a careful correction, and, in the form of notes, several important observations, made subsequently to its publication, have been appended. The work contains one hundred and thirty-three illustrations, and in fine constitutes a most valuable addition to our chemical literature. W. P.

ART. XVIII.—*On Diseases of the Bladder and Prostate Gland, with plates.* By WILLIAM COULSON. 3d edition, revised and corrected. London, 1842, pp. 274, 8vo.

THE first edition of the work of Mr. Coulson appeared in 1838; a second was called for in 1840, and now in a little more than four years from its first appearance a third has been issued. This alone would lead us to look upon the book as possessing some merit—and an examination of its pages has confirmed this opinion. The inflammatory diseases which attack the different coats of the bladder, inasmuch as they are distinguishable from one another by their progress and symptoms, as well as require a different treatment, are treated of in separate chapters, and the important subjects of vesical calculi, their nature and treatment, and acute and chronic inflammation of the prostate gland, occupy a large space. The chemical examination of the urine has of latter years attracted so much attention, and its practical importance is so generally acknowledged, that no work treating upon diseases of the bladder would now be considered complete without it; and Mr. Coulson, aware of this, has furnished an interesting chapter on the subject. Upon the whole this volume presents a good resumé of our knowledge on the diseases of the bladder and prostate gland.

ART. XIX.—*Bulletin Bibliographique des Sciences Médicales et des Sciences qui s'y rapportent ou indication de tous les ouvrages qui se publient en France, sur la Médecine, la chirurgie, l'anatomie, la physiologie, la physique, la chimie, l'histoire naturelle, &c. Suivi d'un Catalogue, de livres anciens et modernes Francais et Etrangeres.* Paris, J. B. BAILLIERE, 1843, pp. 48, 8vo.

THE design of this publication is to furnish, as complete as possible, a catalogue of the works published in France relative to the different branches of medicine, the physical sciences and natural history.

The exact title of each work is given, with its form, number of pages, number of plates, name of the publisher, and price. The place of publication of the Journals and works issued by subscription is also announced.

The interest of this publication will be increased by giving with the title of a new work, a list of the previous writings of the author; and likewise by sometimes enumerating the principal works which have previously appeared on the same subject.

This Bulletin is divided into two parts. The first contains a list of the books published during the quarter. The second contains a catalogue of the an-

cient and modern works printed in France and elsewhere; and finally a list of some of the works in the store of M. Bailliere, presenting their exact titles, condition and price.

This Bulletin is to appear Quarterly, each No. to contain from 32 to 40 pages 8vo. Subscription three francs per annum. It will be a very useful and acceptable publication to the medical student.

ART. XX.—*A Treatise on Food and Diet: with Observations on the Dietetical Regimen suited for Disordered States of the Digestive Organs; and an account of the Dietaries of some of the principal Metropolitan and other establishments for paupers, lunatics, criminals, children, the sick, &c.* By JONATHAN PEREIRA, M. D., F. R. S. & L. S. Licentiate of the Royal College of Physicians in London, &c. &c. Edited by Charles A. Lee, M. D., New York. J. & H. G. Langley, 1843, pp. 325, 8vo.

THIS treatise has strong claims to notice, not only from the reputation which its author has established by his "*Elements of Materia Medica and Therapeutics*," but also by its own merits. It is, indeed, a work of a highly scientific character, in which respect, it differs from most of its predecessors. It contains a full account of the chemical elements of food, a subject to which the recent researches of Boussongault, Liebig, and Dumas have given much interest. A considerable space is also devoted to the consideration of alimentary principles; and the alimentary principles and compound aliments are considered separately, a plan which the author has adopted from Tiedemann, and which he considers very superior to the ordinary method of treating these subjects.

This treatise is divided into two parts; the first being devoted to the consideration of foods, the second to diet.

The substances employed by man as food consist of certain compound bodies termed *alimentary principles*, which by their mixture or union constitute our ordinary food.

Dr. Pereira considers in the first part in successive chapters, 1st, The chemical elements of foods; 2d, The alimentary principles; and 3d, The compound aliments.

In the second part of his treatise, the author treats of the adaptation of aliments to the different wants and conditions of human existence. This involves the consideration of the digestibility and nutritious quality of foods, as well as the times best fitted for eating; and the author treats, 1st, Of the digestibility of food; 2d, The nutritive qualities of food; 3d, The times of eating; 4th, On dietaries; and 5th, On the dietetical regimen suited for disordered states of the digestive organs.

The editor has added some interesting notes and an appendix.

The work, if less readable than most of its predecessors, is extremely valuable as a work of reference; and in copiousness and minuteness of its chemical details it takes precedence of any other on the subject, that has as yet appeared.

ART. XXI.—*Pathological and Surgical Observations on the Diseases of the Joints.* By Sir BENJAMIN C. BRODIE, Bart., F. R. S., Sergeant-Surgeon to the King, Surgeon to St. George's Hospital, and Author of Diseases of the Urinary Organs, &c. From the Fourth London Edition, with the Author's Alterations and Additions. Philadelphia: Lea & Blanchard, 1843, pp. 216, 8vo.

THE works of Sir Benjamin Brodie, are all of them classical. To this rank, they are fully entitled not only from the long and extensive experience of the author, and the prominent position he holds among the most distinguished sur-

geons of the British metropolis, but also by the sound judgment, candour, truth, and discretion which is every where evinced in his writings. The following remarks from the preface to the present volume are characteristic of the author.

"I have endeavoured, accurately and faithfully to record the facts, which have fallen under my observation; and, in the advancement of knowledge, time cannot fail to show how far the conclusions, at which I have arrived, are well founded. I trust that I have sufficient love of science to lead me to desire nothing so much as the attainment of truth; and that I am not so vain as to believe that none of my views can be erroneous. Indeed, one principal result of my labours has been to convince me that life is not long enough for these difficult researches; that the utmost which can be accomplished by the zeal and industry of an individual is to make such progress in the study of pathology as may enable those who come after him to carry their inquiries farther; and that the expectations of any one who aims at higher objects than these must terminate in disappointment."

We need scarcely to recommend the work to the attention of the practitioner and student. To be ignorant of Sir Benjamin Brodie's writings would be inexcusable.

ART. XXII.—*The Hospitals and Surgeons of Paris. An Historical and Statistical Account of the Civil Hospitals of Paris, with Miscellaneous Information and Biographical Notices of some of the most eminent of the living Parisian Surgeons.* By F. CAMPBELL STEWART, M. D. New York: J. & H. G. Langley. Philadelphia: Carey & Hart, 1843, pp. 432, 8vo.

THIS volume reached us just as this sheet was preparing for press, and of course we have had an opportunity of merely glancing over its contents; but this rapid survey has revealed so much that is interesting in it, that we take advantage of a portion of a page at our disposal to invite the attention of the profession to it.

The design of the work is thus set forth by Dr. S., not very lucidly perhaps.

"Having experienced many inconveniences himself on his first arrival in Paris, from the want of correct knowledge as to the customs and habits of the place, and how to employ his time most advantageously, the author has endeavoured to supply it to those who may be going abroad; and besides the information in regard to their addresses, and the hours of admission to the various places of medical resort which is *interspersed* under different heads throughout the pages forming the first part, it will be seen that some sections have been composed for the benefit of this class of readers alone. A full list of the medical and scientific journals, published in Paris, has been introduced; and the Bibliographical Index will, it is hoped, prove useful to those who may be desirous of procuring French medical works."

The second part contains biographical notices of the principal living Parisian surgeons.

This volume constitutes not only the best guide we have seen for the American student visiting Paris, containing information not elsewhere to be found on record, but it presents a vivid picture of the existing condition of medical institutions, and the profession in Paris, which will be read with interest and instruction by the members of the profession generally in this country.

We have only room for one short extract more, and we select the following sentence from the preface, which needs no comment.

"The author has been requested to introduce into the work, a notice of the present condition of homœopathy in Paris; he regrets his inability to do so, from the circumstance of his being entirely ignorant of the estimation in which it is there held, never having heard it named, or made a topic of conversation amongst scientific men, or the intelligent portion of the French community, during the whole period of his residence abroad."

SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES

IN THE

MEDICAL SCIENCES.

ANATOMY AND PHYSIOLOGY.

1. *Secretions derived from Venous Blood alone: a true Portal System in the Kidney.*—In an able paper in the "*Dublin Journal of Medical Science*," Dr. ALDRIDGE brings forward the view that a true portal system exists in the kidney, and that the peculiar secretion elaborated by that gland is, like the secretion of the liver, derived from venous blood, as asserted by Mr. Bowman in the "Physiological Transactions" of the past year. This view is so novel, and, at the same time, so well entitled to demand extended publicity, that its merits may be sufficiently canvassed, we do not deem it necessary to make any apology for introducing copious extracts, comprising the main points of the argument in the following columns. Dr. Aldridge states that in 1839 he remarked on "the improbability of the opinion generally entertained that urine is secreted from arterial blood. I asked why should the kidney differ from the other great emunctories in this particular? The liver and lungs secrete from venous blood; and is it not reasonable to think that in every instance the means of depuration should be implied to the *impure fluid?*.....Jacobson has discovered that in fishes and reptiles the urine is secreted by venous blood. Is it likely so great a difference could exist between the performance of this function in contiguous groups of all vertebrated animals!

"Mr. Bowman, in a paper published in the 'Philosophical Transactions' during the past year, has ascertained that the kidney is furnished with a true *portal system;* and that urine (like the bile) is secreted, in part, at least, from blood traversing, at the time, a second set of capillaries.

"According to him the exceedingly tortuous and convoluted urinary conduits terminate at their final extremities, each by a contracted neck, which conducts into a little chamber or cyst. In this cyst is contained the true glandule of Malpighi, which consists of a tuft or coil of capillary blood-vessels, totally naked, which originates in one of the ultimate branches of the renal artery, and terminates in an efferent vessel. Several of these latter form, by their anastomosing ramifications, the plexus that surrounds each urinary conduit and tubule; the urinary conduits are lined by thick epithelium, and their necks are furnished by vibratile cilia.

"All the blood of the renal artery," says Mr. Bowman, "(with the exception of a small quantity distributed to the capsule, surrounding fat, and the coats of the larger vessels,) enters the capillary tufts of the Malpighian bodies; thence it passes into the capillary plexus surrounding the uriniferous tubes, and it finally leaves the organ through the branches of the renal vein.

"Thus, there are in the kidney *two perfectly distinct systems of capillary vessels;* the 1st, that inserted into the dilated extremities of the uriniferous tubes, and in immediate connection with the arteries (the Malpighian bodies); the 2nd, that enveloping the convolutions of the tubes, and communicating directly with the

veins. The efferent vessels of the Malpighian bodies that carry the blood between these two systems, may collectively be termed the *portal system of the kidney.*"

The former, which may be styled the Malpighian capillary system, is made up of as many parts as there are Malpighian bodies. These parts are entirely isolated from one another; and, as there is no inosculation between the arterial branches supplying them, the blood enters each in a direct stream from the main trunk. This capillary system is also highly remarkable; indeed, stands alone among similar structures, it being bare. The secreting tubes of the kidney, like those of all other glands, are, strictly speaking, an involution of the outer tegument of the frame; their interior is, in one sense, the outside of the body, their walls intervene between the vessels and the exterior, and, as it were, cover them in. But here is a tuft of capillaries extruded through the wall of the tube, and lodged in a dilatation of its cavity, uncovered by any structure; bare, indeed, yet screened from injury in its remote cell with infinite care and skill! Each separate part also of this system has but one afferent, and one efferent channel, and both of these are exceedingly small compared with the united capacity of the capillary tuft. The artery, in dividing, dilates; then follow branches which often exceed it in size, and which gradually break up into the finest. The efferent vessel does not usually even equal the afferent, and in size is often itself a capillary. Hence must arise a greater retardation of the blood in the tuft than occurs probably in any other part of the vascular system; a delay that must be increased by the tortuosity of the channels to be traversed.

"The other system of capillaries, or that surrounding the uriniferous tubes, corresponds, in every important respect, with that investing the secreting canals of other glands. It is well known to anatomists, and therefore does not require to be described at any length. Its vessels anastomose with the utmost freedom on every side, and lie on the deep surface of the membrane that furnishes the secretion.

"Mr. Bowman has been led to speculate on the uses of these two sets of capillaries that he has proved to exist in the kidneys of all animals; and he brings forward much ingenious argument to show that the uses of the Malpighian bodies is to secrete the watery portion of the urine. The analogy between the urinary conduits and the secreting part of other glands, leaves very little doubt of these organs being the essential secerning apparatus. But the naked capillary coil that constitutes a Malpighian body, placed in a cavity closed on every side, except where it communicates with the conduits, composed of vessels much greater in their aggregate capacity than the afferent or efferent vessels, presents an apparatus admirably adapted for excessive perspiratory action; and when, in addition, we find cilia arranged to facilitate the current of a fluid, we can scarcely deny that Mr. Bowman's hypothesis is a very feasible one."—*Lancet*, 29th April, 1843.

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2. *Congenital closure of the descending Aorta.*—Dr. Wise relates in the *Bengal Transactions* the following example of the obliteration of the principal arterial trunk of the body, without its producing any apparent marked effect on the size or strength of the parts upon which the artery was distributed from the circulation being carried on by anastomosing vessels.

A strong middle-aged native, while walking, suddenly fell down, and expired. Dr. Rae, who gave Dr. Wise this preparation, examined the body, and found a large quantity of blood in the cavity of the chest. In following the course of the aorta, which was found enlarged; after leaving the heart, and giving off the innominata, and the left carotid and subclavian arteries, it suddenly contracted for a line in breadth, as if a ligature had been passed tightly round it; and on examination it was found there to be completely impervious under the ductus arteriosus, which was also closed. Immediately under this point the aorta appeared of its natural size, into which several enlarged arteries poured in their blood. The left ventricle was much thicker in its parietes than natural; and on laying open the enlarged ascending aorta immediately

after its leaving the heart, it was found torn in its internal coat for an inch and a half, commencing a short distance above the semi-lunar valves, and extending obliquely upwards. By this torn part, blood had been forced between the cellular and muscular coats and into the cavity of the chest, causing the sudden death of the individual.

Where the left carotid artery divided into the external trunk, an incipient aneurism appeared, in the form of a semicircular swelling. On examining this more carefully, it seemed to be formed by the blood forcing out the arterial pariete without having destroyed the fibrous coat. This is by no means a solitary instance, as Hodson has delineated one of the same kind; and Dr. Wise believes a more extended and careful examination will prove that this is the usual manner in which aneurisms commence. The enlargement of the ascending aorta is another example of the same kind.

The circumference of the different vessels in the case under review, are as follows:—

The greatest external circumference of the aorta near its origin in inches	4·75
Aorta, after giving off the left subclavian	1·15
—— immediately under the strictured ditto . . .	2·72
Left subclavian ditto	1·45
—— carotid ditto	·52
Innominata ditto	1·50

Dr. Wise conceives that the closure of the aorta in this case was congenital.

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3. *Malformation of Heart—this organ consisting of only two cavities—no cyanosis.*—A child in the Foundling Hospital of Paris was observed to be often affected with great difficulty of breathing, with a quick dry cough, and especially when it drank, a state threatening suffocation ensued. The child was large, and externally well formed; but it died in eleven days, apparently of umbilical phlebitis.

On opening the pericardium, the heart was found altered from its natural form, being bag-shaped, or rather rounded at the place of the apex, and to consist of only one auricular and one ventricular cavity. Viewed from the front, the pulmonary artery was quite hidden by the aorta, which originated from the right and anterior portion of the ventricle, and by the auricular appendices, for of these there were two well-formed, though only one auricle. A line directed obliquely backwards, and from right to left along the base of the ventricle, would have crossed first the opening of the aorta, next that of the pulmonary artery, and lastly, the auriculo-ventricular opening. The spleen was large, but none other of the viscera or portion of the circulatory apparatus presented any anomaly. No cyanosis had been noticed during life.—*Archives Gen. de Med.*, Feb. 1843.

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4. *Movements of the Heart.*—M. Monod had an excellent opportunity of examining the movements of the heart in an infant, which was born with thoracic ectopia, the parietes of the thorax being deficient, and the heart being visible to the eye. The pericardium also was wanting. The child lived 14 hours, but during this time many important facts were ascertained.

The contractions of the ventricles of the heart did not take place over its whole surface at the same moment, but progressed from the base to the apex; at the same time the organ became of a pale colour, its surface wrinkled, a movement of twisting from right to left was observed, and lastly, the apex of the heart was carried upwards and forwards.

The diastole presented the same phenomena, but in an opposite order. The heart relaxed suddenly; then the ventricular cavity became filled with blood, swelled out, became elongated, and the apex was projected downwards. If the total duration of these two movements were divided into four equal spaces of time, it would be seen that the systole occupied three of these, the diastole only one.

The contractions of the auricles commenced in their free appendices; but in

them the duration of the contraction and relaxation were in the inverse ratio of those of the auricles. The systole, or contractions, occupied only one-fourth of the time; the diastole, or relaxation, three-fourths.

With regard to the order of the succession of movements, both ventricles contract at the same time, and both relax together; it is the same with the auricles. There are two periods of repose; one, which is the shortest, is between the first and second sound; the other, which is the longest, between the second sound and the first.

In this case the maximum of intensity of the first sound did not occur at the base of the ventricles, but at the middle of their fleshy walls; and M. Monod thinks that it was caused by the shock of the walls of the ventricles against the internal fleshy columns at the moment of contraction. As to the second sound, he thinks it was due to the return of the wave of blood against the sigmoid valves.—*Ed. Med. & Surg. Journ.* July 1843, from *Bullet. de l'Acad. de Med.* 7th Feb. 1843.

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5. *Facts Relative to the Corpuscles of Mammiferous Blood.* By Martin Barry, M. D.—No observer can learn the structure of the blood-corpuscles, who does not carefully investigate their mode of origin, and patiently follow them through all their changes. Where are these changes to be seen? Not in blood taken from large vessels, which are merely channels for conveying it, but in that contained, and almost at rest, in the capillaries,—and especially in the capillary plexus and dilatations; a remark which I believe is new, though many figures published by myself in the *Philosophical Transactions* show the observations on which it is grounded to have been long since made. But there is another source from which my information has been obtained—the large cells in the ovum. From these the corpuscles of the blood seem to have descended; and they undergo changes essentially the same.

1. The mammiferous blood-corpuscle, like one of the cells of the ovum, is at first a disc, or what is now called a "cytoblast," *i. e.* a cell-germ. It is not a flattened vesicle or cell. Like other discs or cytoblasts, however, it may and does *become* a cell; but then it is no longer flat. In the blood-disc you see a central, colourless, concave portion, around which lies the red colouring matter.

2. As usually met with, the blood-disc is *round*, with the exception of two or three instances in which, from the observations of Mandl in France, and Gulliver in this country, it has been discovered to be *elliptical*. I have since found that even in mammals, where the blood-disc is usually met with round, *its original form is elliptical*. I have seen this to be the original form of the blood-disc in man.

3. The discs first become round, continuing flat; subsequently they pass into an orange-shape, and lastly become globular. They also very much increase in size.

4. Along with these alterations in the form and size of the blood-discs, there takes place another change. Instead of a mere concavity, there is now seen a colourless, pellucid, semi-fluid substance; which, as the corpuscle becomes orange-shaped, is found to be, not in the centre, but *on one side*. It is the nucleus of the corpuscle—the corpuscle itself having become a cell. This pellucid substance or nucleus divides into and gives off globules. Each globule, appropriating to itself new matter, becomes a disc; and each disc, undergoing changes like the first, gives origin to other discs, a group of which constitutes the colourless corpuscle of the blood; for, with the changes now mentioned, the red colouring matter is consumed. Thus, as the red pass into the colourless corpuscles, there must exist all intermediate stages; between them no line of distinction can be drawn.*

* The colourless corpuscles in other vertebrata, for instance the batrachians, being much smaller than their red corpuscles, cannot be these red corpuscles in an altered state. Nor is any such change to be expected here. The red corpuscles usually seen circulating in these animals are not, as in mammalia, *discs*, but *nucleated cells*. Some

5. The corpuscles of the blood are propagated by means of parent cells. A parent cell has its origin in a colourless corpuscle; this colourless corpuscle being an altered disc. As the parent cell is forming, the new discs within it gradually become red, and are at length liberated to give origin in like manner to new discs, or to be appropriated in some other way.

6. From sect. 4. it will be seen that the disc, or so-called "cytoblast," is originally a pellucid globule; which globule therefore is the true cell-germ.

7. Sometimes the quantity of the pellucid substance in the blood-cell is very much increased. This takes place at the expense of the red colouring matter which surrounds it. The blood-corpuscles, now cells, I have seen in various parts collected until the capillaries were completely *filled* with them, and until they had become pressed together into many-sided objects. In have met with vessels at the edge of the crystalline lens, some parts of which presented no other than the pellucid semifluid substance, arisen in the manner now described, and no longer contained within the cells.

8. This originally colourless substance, derived from the nuclei of blood-cells, and nearly filling the capillaries as I have found it, appears to constitute the essential part of coagulable lymph, to organize the same, and to give origin to the tissues, &c. in the manner I have elsewhere described. It seems to be this same originally colourless substance, derived from the nuclei of blood-cells, that forms the exudation-corpuscles of authors, the fibres of false membrane, and the filaments in coagulating blood—filaments which, as I have shown, here and there arise while this substance is still within the cells.—*Lond. Edin. and Dub. Philos. Mag.*, May 1843.

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6. *Influence of Asphyxia on the Secretion of Bile.*—Professor Bouisson of Montpellier, has made some experiments to ascertain the influence of asphyxia on the secretion of bile, and the results prove that slow asphyxia in producing venous congestion of the liver, far from diminishing the biliary secretion as asserted by Bichat, on the contrary, strikingly increases it. The physical characters of the bile are also altered, this fluid assuming a darker colour, becoming sanguinolent, or even black; and its consistence is also increased, which characters appertain to highly carbonized bile This change is explained by the fact that the lungs and liver are the two outlets by which carbon is eliminated from the system; and the gradual suspension of the function of the lungs in slow asphyxia, produces an exaggeration of the supplementary function performed by the liver.—*Journal de la Soc. Méd. Prat. de Montpellier.*

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7. *Absorption of Iodine.*—M. Leon Brousse has tested the urine of several patients who had been treated for hydrocele by the iodine injection. In every instance he was readily enabled to discover the metalloid in the urinary secretion by the third or fourth day after the operation, and in one instance, at least, as early as the second day. In this case, that of a Spaniard, forty years of age, the scrotum continuing swollen, and evidently containing fluid five weeks after the operation, it was punctured with a lancet, and a sanguinolent fluid evacuated, which, on being subjected to the usual tests, yielded evident indications of the presence of iodine.—*Journ. de Chimie Méd.* Dec., 1842.

of these nucleated cells, however, give origin to discs having very much the same form, size, and general appearance as the blood-discs of the mammalia. In the frog I saw such *discs* passing into the state of colourless globules, which, acted on by acetic acid, presented just the same appearance as the colourless corpuscles of the human subject.

MATERIA MEDICA AND PHARMACY.

8. *Acetic extract of Cantharides.* By M. Soubeiran.—The acetic extract of cantharides has been long used in Germany, and is considered as the best and most efficacious preparation yet made. This preparation is made in the following manner: take 4 parts, by weight, of cantharides powder; 1 part of concentrated pyroligneous acid, and 16 pints of alcohol; digest at a temperature of about 90°; express the fluid; filter and distil off the alcohol at a gentle heat. A syrup-looking extract, of a buttery consistence, is left—the acetic extract of cantharides. It is powerfully vesicant. It is only necessary to spread a thin film over paper, and apply it directly to the skin, when it rapidly causes free and full vesication. The presence of the acetic acid in this preparation prevents the cantharadine from crystallizing,—a circumstance which is a great inconvenience in the etherial extract, rendering its application not always certain.—*Edin. Med. & Surg. Journ.*, July 1843, from *L'Experience*, April 1843.

9. *Ammoniacal solution of Ergot of Rye.* By W. R. Gore, M. D.—Into half a pint of aromatic spirits of ammonia, I put four ounces of fresh ergot of rye, bruised coarsely. I allow this to stand for a month, frequently stirring the ingredient with a glass rod in the fluid; after which I squeeze every drop of the spirit out of the rye. The "ammoniacal solution" thus made, has a fine dark colour, and looks inspissated. In a glass-stoppered bottle it may be preserved for any length of time without deterioration of power. This solution contains all the active principles of the rye in a convenient form, and increased efficacy, the ammonia causing the ergot to act more rapidly, and with greater certainty. I administer 30 drops of it in a wine-glass of cold water, every ten minutes, until the action required is sufficiently developed, applying gentle pressure with the flat of the hand, to the abdomen, when the pains are present. Three such doses have, in the majority of cases which came under my observation, proved sufficient; but circumstances will now and then alter the requirements, as in other branches of medical practice in respect to various remedies.—*Medical Times*, Nov. 5, 1842.

MEDICAL PATHOLOGY AND THERAPEUTICS AND PRACTICAL MEDICINE.

10. *Mercurial Salivation cured by Nitro-muriatic Acid baths.*—A case of salivation in a child four years of age, resulting from the use of mercurial frictions employed for the cure of meningitis, is related by Dr. Baumgartner in the *Journ. des Connaiss. Med. Chirurg.* (March, 1843). The salivation was excessive, and for two months and a half resisted all the usual remedies employed to control it. M. B. then prescribed warm baths, slightly acidulated with equal parts of nitric and muriatic acid, and after the third bath the salivation ceased and did not return.

11. *Abortive method of treatment for Zona.*—M. Monnaret has employed the plaster of Vigo with success in the treatment of zona. The plaster was applied over the whole surface of the skin affected, and the incipient vesicles speedily arrested in their development, and those already formed rapidly desiccated.—*Journ. de Med. et de Chirurg. Prat.*, Oct. 1842.

12. *Herpetic Pruritus.*—Dr. Barosch has cured a case of herpetic pruritus of the perineum and scrotum, which for twelve years resisted various remedies, and caused the greatest discomfort to the patient, by the following solution:—℞. Iodine, gr. xv., hydriod. potass. ℈ij.; solve in aq. distill. ℥v. alcohol, ℥j. M. This solu-

tion applied to the parts, in three weeks effected a complete cure.—*Gaz. Méd. de Paris*, Jan. 28th, 1843, from *Oesterreichische Med. Wochens.*

13. *Pruritus of the Vulva.*—This is a not unfrequent and a most distressing complaint. In the treatment of it, M. Lisfranc places his chief reliance on an occasional bleeding from the arm. Lotions of alum, or of nitrate of silver, are sometimes very useful; but on the whole, M. Raspail's remedy—five parts of starch and one of camphor—is still better as a local application. It may be applied two or three times a day; the proportion of the camphor should be made to vary, according to the irritable state of the affected parts. Fumigations with the vapour of sulphur will sometimes effect a cure, when all other remedies fail. Let it ever be remembered that pruritus of the vulva is not unfrequently connected with some morbid affection of the uterus, and therefore that our chief attention must be directed to the removal of the cause. An opiate enema is sometimes a valuable remedy. M. Lisfranc alludes to a very obstinate case, where a very rapid cure was obtained from the administration of sulphate of quinine, after other means had quite failed.—*Med. Chirurg. Rev.*, April, 1843, from Lisfranc's *Clinique Chirurg.*, tom. ii.

14. *Epilepsy, caused by Lumbrici.*—Dr. Michel records in the *Journal des Connaissances Médicales* (Sept. 1842) the case of a girl 10 years of age, who had been subject to epileptic attacks for five years, which entirely ceased after the expulsion from the intestines of a number of worms.

15. *Gallic Acid in Menorrhagia.*—Professor Simpson stated at a meeting of the *Med. Chirurg. Soc. of Edinburgh*, April 19th, that for the last year he had employed gallic acid in some cases of menorrhagia, with the most successful results. Like all other remedies directed against that disease, it had also occasionally failed in his hands. Some of the cases which had completely yielded under its use were of an old standing, and aggravated description. He gave it during the intervals, as well as during the discharge, in doses of from ten to twenty grains per day made into pills. It had this advantage over most other anti-hemorrhagic medicines, that it had no constipating effect upon the bowels. He was first induced to use it from finding a case of very obstinate menorrhagia get well under the use of Ruspini's styptic, after many other remedies had utterly failed, and from it being alleged that gallic acid was the active ingredient in that styptic. He suggested whether the anti-hemorrhagic properties of some of our common astringent drugs may not depend upon the gallic acid as much or more than upon the tannin which they contain, or upon the tannin becoming changed into gallic acid within the body.—*Lond. & Edin. Monthly Journ. Med Sci.*, July, 1843.

16. *Pneumonia of Children.*—The *B. & F. Medical Review* for April last, contains an interesting report on the Pneumonia of children, as it prevails among the poor in London, by Charles West, M. D. We extract from it the following remarks on the treatment of the disease.

"I will now endeavour to sum up as briefly as possible, what I think I have learned of the *treatment* of this disease by careful and unprejudiced observation. I do so, however, with great diffidence, for I feel that none but they who have grown gray in the practice of their profession, and who can preface their remarks by appealing to 'lengthened meditation, and to the diligent and faithful observation of many years,' are in a position to claim for their opinions on such a subject any consideration. I can only plead my excuse, in the words of Sydenham; if indeed there be not something of presumption in borrowing the expressions of that great man: 'Cæterùm quantacunque fuerint aliorium conamina, semper existimavi mihi vitalis auræ usum frustra datum fore, nisi et ipse in hoc stadio versatus, symbolum aliquod, utcunque exiguum, in commune Medicinæ ærarium contribuerum.'

"*Depletion.* The first rank as a curative agent in the treatment of idiopathic

pneumonia, I would unhesitatingly assign to depletion. It is true indeed that on this, as on some other points, my experience differs from that of French writers who have studied the disease at the children's hospital at Paris. One of these gentlemen* has affirmed that depletion, whether general or local, invariably debilitates the organism, and accelerates the fatal event. True as this assertion may be of pneumonia occurring under the peculiar circumstances which that institution presents, it cannot be extended to it as it is seen in this country. In no case of idiopathic pneumonia which came at an early stage under my notice, have I had occasion to regret the employment of depletion carried so far as sensibly to affect the system. In children of two years old and upwards I have usually resorted to venesection; but in younger subjects have contented myself with the application of leeches. From a child of two years old I have been accustomed to take ℥iv. of blood, and to direct the application of four or six leeches beneath the scapulæ if the symptoms should appear unrelieved after the lapse of a few hours. The effects produced by one bleeding in some of these cases have been most striking; the violent symptoms have sometimes yielded at once, and recovery has gone on uninterruptedly almost without the employment of any other remedy. Of the frequent repetition of bleeding in *these cases*, whether from the arm or by leeches, I have no experience, but my conviction is that children *generally* bear repeated bleedings ill, and I therefore do not practise them. That form of pneumonia which developes itself out of catarrh appears to be least under the control of depletion; no instance having come under my notice in which the attack was cut short by its employment, though here too, local bleeding at the outset is often beneficial.

"*Tartar-emetic.* The tartar-emetic is a remedy of great value in the treatment of pneumonia; but I can by no means subscribe to the unqualified recommendation of it by some French physician in all forms and at all stages of the disease. I would rather say of it what Wolfgang Wedel says of opium, "Sacra vitæ anchora, circumspecte agentibus, Cymba Charontis in manu imperiti." The cases in which it has seemed to me to be of the greatest service were those in which the pneumonia developed itself out of previous catarrhal symptoms, or in which it supervened on measles, or came on in the course of hooping-cough. In such cases, antimony given in doses of a quarter of a grain to a child of two years old, repeated every ten minutes, till free vomiting is produced, and afterwards continued every two or three hours for forty-eight or sixty hours, has often appeared to be of the most essential service, and the preservation of the patient's life has seemed in several instances to be due to its employment. In pneumonia, too, which has not been preceded by catarrhal symptoms; if after venesection the respiration still continues as hurried as before, and the condition of the patient has been apparently but little improved by that measure, tartar-emetic has seemed to be extremely useful. I have been accustomed to give it in large doses, as a quarter of a grain for a child two years old, and to repeat it every two hours for twenty-four hours, and have observed its use to be followed by a great diminution in the frequency of the respiration, and considerable relief to the distress of the patient; and believe that when given in these cases it paves the way for the advantageous employment of mercury. In no instance, however, in which pneumonia had been neglected, so that the period for depletion was past, and in which distinct bronchial respiration was audible, have I seen beneficial results from the employment of antimony in large doses, as recommended by many French practitioners. It is true that the heat of skin will subside and the respiration will diminish in frequency; thus inducing a treacherous appearance of improvement; but the strength of the patient is seriously impaired by it, the occurrence of a comatose condition, or of what the Germans have called the paralytic stage, will be hastened, and the fatal event accelerated, as I have learned by sad experience in cases where I gave this mode of treatment a full trial. It is not meant, however, that after the supervention of bronchial respiration, antimony ought never to be given, but only that under such circumstances

* M. Becquerel, in the Archives Générales de Médecine, 1839, p. 471.

it has appeared to me that it should not be employed except in small doses and in combination with other remedies.

"*Calomel.* A very high rank as a remedial agent in the treatment of idiopathic pneumonia must be given to calomel. I have been accustomed, after due depletion, to administer calomel in doses of two grains, combined with a quarter of a grain of tartar emetic, and half a grain of Dover's powder, and to repeat it every four hours for children of four years of age; diminishing the antimony after the lapse of twenty-four hours, if distressing sickness were occasioned by it, but persevering in the use of the calomel, provided the patient were not overpurged, until the disease began to yield or the gums showed signs of the mercurial action. The latter occurrence has been by no means frequent, and in no instance have I met with dangerous mercurial affection of the mouth from the employment of calomel in these cases. It has always been my custom to suspend the use of calomel for twelve hours immediately on the first appearance of mercurial affection, and if after the lapse of that time the signs of mercurialization had not increased, to return to its use in smaller doses, and repeated at longer intervals, provided the symptoms of pneumonia were so urgent as to demand its continuance. I have oftener been harassed by the purging which calomel induces, though this may be in a great degree controlled by combining it with Dover's powder. Besides the inconvenience and danger attending overpurging, calomel has seemed in some instances, especially in infants, to occasion a very harassing nausea and vomiting, which have rendered its discontinuance necessary, lest the patients should suffer from the want of sufficient nutriment. In such cases I have had recourse to mercurial inunction, and under its employment recovery has taken place even where circumstances had seemed to warrant none but a most unfavourable prognosis. It is especially in cases of neglected pneumonia, where the time for depletion has long gone by, where the administration of antimony is evidently contra-indicated by the exhausted state of the patient, and where the existence of diarrhœa forbids the employment of calomel, that the full value of this remedial agent is seen. I have employed it in the proportion of ʒj. rubbed into the thighs or axillæ every four hours, in children of four years of age. I have never observed salivation induced by it, but have seen the symptoms gradually diminish in severity during its employment, and the solid lung become once more permeable to air.

"*Stimulants.* Usually, when the employment of mercurial inunction is indicated, the time for all directly-depressing measures has long passed, and the best means of supporting the patient's strength become matter for serious consideration. No point in the treatment of the disease is more difficult than that of seizing the exact moment when the employment of stimulants becomes necessary, and no general rule for regulating their use, can be laid down. It has, however, appeared to me to be seldom safe to withhold them when extensive bronchial respiration exists in a case on its first coming under the care of the practitioner, or when it has supervened in spite of active antiphlogistic treatment. If the patient too, is beginning to be much purged; if the respiration is becoming more laboured and irregular, though diminished in frequency; and if the pulse is becoming more frequent and above all smaller and smaller, it is high time to resort to their use. Wine is as indispensable in such cases in the pneumonia of children as that of the adult, and it may be necessary to give it even to infants at the breast. Ammonia may also be advantageously administered in this stage of the disease, either in a mixture with the decoction of senega, or dissolved in milk, which conceals its disagreeable pungency better than any other vehicle. If diarrhœa does not exist, strong beef-tea or veal-broth is the best form in which nutriment can be given; but if the bowels are relaxed, arrow-root, or the *decoction blanche** of the French hospitals should be substituted for it.

"*Blisters.* Blisters would probably be employed about this time in the treat-

* This, which is similar to the white decoction of Sydenham, is prepared by boiling half an ounce of hartshorn shavings, and the inside of a roll, in three pints of water, till reduced to a quart.

ment of pneumonia in the adult, but I cannot recommend their application in children. One objection to them arises from the time which elapses before they rise sufficiently, during the greater part of which they inflict considerable pain on the little patient, and make him extremely restless. The sores they produce when they cause vesication are sometimes very dangerous: they may even become gangrenous, and occasion the patient's death. Even if no such unfavourable results follow, they are nevertheless a source of constant annoyance to the child, at first from their soreness, afterwards from the troublesome itching which is felt when they begin to get well. Some pain is unavoidably produced whenever the dressings are changed, and the frequent repetition of this painful process sometimes makes the child take a dislike to its attendants, who seem to it to be the causes of so much suffering. It becomes suspicious of every one and quite unmanageable, while nothing is of greater moment than that a sick child should retain its fondness for its attendants during the whole period of its illness.

"*Mustard-poultices.* It is quite possible that some of these objections may be obviated among the children of the wealthy by that care and those comforts which riches can always command, but I have been led, by the reasons above stated, to discontinue the employment of blisters in the treatment of pneumonia among the children of the poor. The same objections do not apply to the employment of mustard-poultices, and in many instances they have seemed to be productive of great good. They produce a much more speedy effect than blisters, and may be applied with safety over a much larger surface, hence they are often of signal benefit in relieving sudden accessions of dyspnœa; while from their not occasioning any breach of surface they may be reapplied as often as the emergencies of any case require.

"Of the subsidiary medicinal agents, such as ipecacuanha and the class of expectorants, nothing need be said; but there are one or two points in the general management of the disease not altogether unworthy of notice.

"*General management.* It is desirable, in all cases of pneumonia at all severe, that infants should be taken from the breast, and that the mother's milk should for a time be given them from a spoon. This is of importance on two accounts; partly because the thirst they experience induces them to suck overmuch, (hence it is well that barley-water or some other diluent be given to them frequently instead of the milk, in order that they may quench their thirst without overloading their stomach;) partly, because the act of sucking is in itself mischievous, since, as must at once be perceived, it taxes the respiratory functions to the utmost.

"A second important point is never to allow the children to lie flat in bed or in the nurse's arms, but to place them in a semi-recumbent posture in the arms, or propped up in bed. By so doing respiration is facilitated, since the diaphragm is relieved from the pressure of the abdominal viscera, and that stasis of the fluids in the posterior parts of the lungs is prevented, which has been shown by French writers to be so prejudicial to infants or children labouring under pneumouia.

"The only other point to which I will allude is, that when pneumonia has reached an advanced stage, or has involved a considerable extent of the lungs, the children should be moved only with the greatest care and gentleness, lest convulsions should be brought on. Whatever may be the explanation of this occurrence, the danger is by no means an imaginary one, for I have seen instances in which children have been seized with convulsions immediately on being lifted somewhat hastily from bed and placed in a sitting posture; and on this account I have referred to what might seem to be a trivial matter."

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17. *Statistics of Epilepsy.*—The following facts are taken from the first part of an interesting paper on this subject, by M. Leuret:—

Among 106 cases of epileptic patients, 24, or nearly one-fourth, began to be affected between the 10th and 14th year of their age; 18 were first attacked between their 15th and 19th year, and 16 between their 20th and 24th year; 58 patients, consequently, of the whole number were first attacked between their 14th and 24th years. Of the 106 patients, the disease was ascertained to have existed either in the father or mother in 6 instances only. And in no more than

8 cases was it found that the parents had died of any disease of the brain; there was insanity thrice; apoplexy twice; paralysis once; suicide once; meningo-cephalitis once. Of the 106 patients, 30 had been drunkards; 24 masturbators; and 15 addicted to women. The actual or presumed cause of the first attack was ascribed to terror, in fifteen cases; to onanism in twelve; to drunkenness, in six; to anger, in two; to distress, in two; to falls, in two; to libertinage, in one; &c.; 30 of the 106 patients had an attack very regularly once a-fortnight; 17 suffered attacks once a-month; 13 once a-week; 9 every three or four days; 4 almost every day; 2 every day; 1 every two months; 3 every three months; and 24 at very irregular intervals. In 35, the attacks supervened in the night especially; in 29, they were as frequent in the day as in the night; in 12, they frequently occurred in the day; in 8, they occurred during the day only; in 8, in the night only; in 3 in the morning only; in 3 others, generally in the morning; and in 1, in the evening only.—*Prov. Med. Journ.* 29th July 1843, from *Archives Générales*, May 1843.

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18. *Influence of Menstruation on the milk of nurses, and on the health of the infants they suckle.*—A memoir on this subject was read before the French Acad. of Medicine, by M. Raciborski on the 30th May last.

The opinions of physicians are divided as to the influence exerted by menstruation on the milk of nurses and the health of their infants. Some think that menstruation has no injurious effect in this respect: others are of opinion that there is no general rule on the subject, and that the state of the health of the child is the only guide; while others again, with M. Gendrin, would not, under any circumstances, permit a woman to continue nursing after the catamenia returned. According to M. Gendrin, the milk, under the influence of the menstrual evacuation, becomes decidedly impoverished, the globules being smaller, less numerous, and mixed with granulations of *colostrum;* and the infant consequently becomes debilitated, affected with diarrhœa, and progressively wastes away, because of the diminution in the nutritive qualities of the milk.

It would certainly seem reasonable to be guided by the condition of the child, and such a guide may indeed be practically sufficient. The scientific question is, however, worth being cleared up; and taking a case where a child's health does suffer, it would be satisfactory to know whether its indisposition was really due to any change effected in the milk by the influence of menstruation.

M. Raciborski examined the milk of seven women whose menstrual evacuation continued during either the entire or a part of the time that they were nursing. He took care always to examine the milk before the infant had sucked; and at least two specimens of the milk of each of the women was examined—one being taken while the catamenia were flowing—the other in an interval between the menstrual periods. The examination of the milk was chiefly directed—to its external aspect—its chemical reactions—its density before and after the separation of the cream—the space occupied by the cream in Chevalier's graduated tube; and finally, the relative diameter of the globules under the microscope. Similar observations were made on the milk of females whose menstruation was suspended.

The children nursed by the menstruating females enjoyed the most perfect health. Two of these women presented peculiarities worthy of notice; one could nurse with one breast only, the secretion of milk being suppressed in the other, in consequence of a phlegmon that supervened shortly after delivery, and yet, though her poverty was extreme, her child was vigorous and in perfect health: the other menstruated a month after delivery, and continued to do so every month since, the secretion of milk was nevertheless established the third month after her confinement, and she then began to suckle her child, who had been previously at nurse, and was thriving very badly. Notwithstanding all these circumstances, the trial succeeded completely, the mother had an abundant supply of milk, and the child's health soon became completely restored.

It results from these researches—

1. That, contrary to late opinions, the milk of menstruating nurses does not

sensibly differ, in physical, chemical, or microscopical characters, from the milk of females whose catamenia are suspended.

2. The only difference that can be at all detected between these two kinds of milk is, that in most cases the milk of menstruating nurses contains less cream during the menstrual periods, than in the intervals between those periods; and hence arises the bluish appearance presented occasionally by such milk.

3. That a nurse should never be rejected merely because she menstruates.—*Dublin Med. Press*, Aug. 2, 1843.

19. *On Abnormal Sounds in the Ear.* By G. Kramer, M. D., of Berlin.—The occurrence of accidental or abnormal sounds or noises in the ear has been accounted for in three ways. 1. It is said that sound is caused in the interior of the organ of hearing; 2. That it arises from condensation of air in the cavity of the tympanum; and 3. It depends on tension of the membrana tympani.

Although experience has never demonstrated the existence of aneurismal dilatation of the small vessels of the internal ear, and although the small calibre of the vessels must render such an accident very improbable, yet Itard seems disposed to admit it in certain cases giving rise to the development of certain sounds in the interior of the ear. This, however, is a mere hypothesis. The pulsations of which some plethoric individuals complain, have likewise been explained by distension of the arteries of the ear; but it is much more probable that sounds of this kind are produced in the sinuous canals through which the blood-vessels pass to the brain, and that they are rather felt in the head than heard in the ear. The same remarks is applicable to the sounds which attend aneurism of the primary carotid and arch of the aorta, or hypertrophy of the heart.

As to condensation of air in the cavity of the tympanum, it is impossible to conceive how such an effect could be produced. Previous obliteration of the Eustachian tube must coincide with such an accident; but then the retained air would be dilated by the natural heat of the body, instead of being condensed. Now, dilatation of the air in the cavity of the tympanum is not a cause of "singing" in the ear, for this symptom is as often absent as present in cases of obliteration of the Eustachian tube.

The third alleged cause is likewise inadmissable. The membrana tympani is always in a state of tension, in healthy persons free from the noises alluded to; it is of a shining hue, and very convex outwards; I have never seen this membrane more tense than it should be in several hundreds of patients whom I have examined with the greatest care, and I am unacquainted with any symptom indicative of this pretended excess of tension. The only alterations which it presents are changes of texture; we find the membrana tympani thickened, inflamed, destroyed in part or in whole, opaque, rough, covered with vegetations, &c., without being able to trace any connection between these organic lesions and the production of abnormal sounds in the ear.

It has been affirmed that all obscurity in the diagnosis of increased excitability of the auditory nerve, as a cause of abnormal sound, ceases as soon as the symptom becomes connected with deafness. By deafness we are here to understand diminution and not a complete loss of the power of hearing; for mention is made of deafness which has suddenly ceased on the disappearance of the sounds, while the sudden disappearance of true deafness is a thing absolutely impossible. But deafness (or rather hardness of hearing), accompanied by irregular noises in the ear, is not dependent on some affection of the auditory nerve alone. It is accompanied by various diseases of the auditory apparatus, and this so often, that we cannot admit from the coexistence of deafness with abnormal sounds that the latter depend on increased sensibility of the auditory nerve.

To prove this assertion I have taken from my note-book one thousand cases of diseases of the ear, and I have classed them in two series, according as they were or were not accompanied by accidental sounds; the species of disease was noted in each case after careful examination. The following are the results obtained:—

	With Sounds.	Without Sounds.
Erysipelatous inflammation of the meatus and obstruction by cerumen	72	22
Inflammation of the glandular apparatus of meatus	11	10
Inflammation of its cellular tissue	8	0
Inflammation of its periosteum	8	3
Acute inflammation of membrana tympani	3	1
Chronic inflammation of membrana tympani	95	81
Congestion of Eustachian tube	40	44
Contraction of Eustachian tube	11	8
Obliteration of Eustachian tube	2	0
Inflammation of cellular tissue of cavity of tympanum	2	1
	245	170
Increased sensibility of auditory nerve	462	123
	707	293
	1000	

In all these cases the power of hearing was more or less diminished. In 707 of them the deafness was accompanied by abnormal sounds; and we should, therefore (if the doctrine alluded to be true), admit increased excitability of the auditory nerve; but this was absent in 245 of the 707 cases. The coexistence of deafness and "singing" in the ears is not, therefore, a certain sign of exalted excitability of the acoustic nerve, since it does not occur in 245 out of 707 cases; while of 585 cases, in which this increased excitability did exist, 123 were unattended with any trace of abnormal sounds in the ear. The mistake of writers on this subject depends on their explanation of abnormal sounds considered as a symptom of disease.

From the numerous observations which I have made, it appears to me that the duration and interruption of these sounds, their intensity, weakness, and infinite degrees of diversity are in no way connected with any particular affection of the auditory apparatus. The same individual may labour under the same form of disease in both ears, yet he shall hear the sounds on one side and be free from them on the other. Hence we must conclude that the cause of these sounds remains enveloped in the greatest obscurity, and that we cannot attach to them the slightest importance in the diagnosis of the diseases of the ear. Some writers tell us that when the affection is confined to a single ear it announces some lesion of the peripheral extremity of the nerve; but that when both ears are attacked, and especially if some trouble of vision coexist, we may conclude that the central extremity of the nerve is implicated.

I can affirm that the occurrence of accidental sounds in the ear on one side as well as on both is observed in various diseases of the auditory apparatus, without any sign that the auditory nerve has suffered, either in its peripheral or central part. On the other hand, increased excitability of the auditory nerve almost always attacks both sides at the same time (or at least very nearly so), and gives rise to a remarkable change in the moral faculties, to depression of spirits, nervous headache, disinclination to study, and disturbance of the sleep, without any proof that the central part of the auditory nerve is affected. That such is the case is proved by the immediate benefit obtained in this form of disease by use of gentle excitants, directed, in the form of vapour, towards the peripheral extremity of the nerve, through the Eustachian tube, the cavity of the tympanum, and the fenestra ovalis.

As to coincidence of this state with disordered vision, I am convinced that the latter depends on some change near the origin or traject of the optic nerves, which has no connection with any analogous change in corresponding portions of the auditory nerve.

It has been said that deafness connected with accidental sounds in the ear presents the following peculiarity:—Compression of the carotid arteries dissi-

pates the false sounds and the deafness with them. I have never seen any example of this kind, nor is the assertion supported by a single case. Itard, indeed, cites one case, but it is far from conclusive. On compressing the carotids he succeeded in almost entirely removing the abnormal sounds; but he does not tell us that the accompanying deafness was *almost entirely* removed with them.

In the treatment of this affection local and general blood-letting is commonly employed, from the idea that it is connected with congestion; but we cannot admit the propriety of this mode of treatment if we reflect on the variety of diseases with which the existence of abnormal sounds in the ear is connected. In cases of nervous deafness blood-letting would be certainly injurious; it would have a very doubtful effect on the sounds, and would inevitably increase the deafness.—*Prov. Med. Journ.*, Feb. 11, 1843, and *Annales de la Chirurgie Francaise*, Jan. 1843.

20. *Effects of Lead on the Human System.* By Dr. Seymour.—There are many trades and callings in which the use of lead is very extensive. This mineral poison may get into the system by inhalation. Its first perceptible poisonous effect is upon the muscular structures, which lose their contractile power and become flabby and diminished in volume. The muscular coats of the intestinal canal are those which are generally first affected, some portions of them being dilated whilst others are contracted. Constipation arises from this, accompanied with great pain and spasmodic action of the recti muscles. In its early stage this colicky attack of the bowels is very easily relieved by the warm-bath and doses of castor oil. Some physicians have recommended opium and remedies of that class, but castor oil is, after all, the very best. By the judicious employment of these means the affection may be removed, but if the patient returns immediately to his work it recurs in an aggravated form; the muscles of the arm become paralyzed, and it "drops," as it is termed. A similar effect may be produced by an over-exertion of these muscles, as occurs in some trades, such as those of shoemakers, cobblers, &c. The mode of curing such affections as these is to abstain from the occupations which cause them; using a generous diet; resting the hand upon a splint, as in this man's case; and, best of all, by the employment of electricity. In addition to the use of these several means, this man was ordered to take half a drachm of the balsam of Peru three times daily, a remedy which has been supposed to be very useful, and I have certainly seen it of great service in cases in which over-exertion of the muscles has caused the paralysis. But this is not all. If the patient should be compelled by circumstances to return to his occupation and again inhale the poison, he will have accumulations of synovia in the joints, producing a species of synovial rheumatism, which will only yield to rest, local pressure, good food, and the occasional use of the warm-bath; though sometimes cases of this kind occur which require the same active treatment as severe idiopathic rheumatism. Should the same cause of disease be still in operation, a species of bronchitis, resembling bronchial phthisis, supervenes in which the patient spits up large quantities of fawn-coloured matter. On this state of things a more fearful disease than all, epilepsy, may supervene, and then death soon ensues.—*Lancet*, July 22, 1843.

21. *Treatment of Hydrencephalus by Compression.*—Dr. Engelmann relates in *Puchelt, Chelius, and Nægele's Medicinische Annalen*, vol. 8., four cases of Hydrencephalus successfully treated by compression with adhesive strips.—*Gaz. Med. de Paris*, Jan. 28, 1843.

22. *Thickening and deep Fissures of the Skin, in an Infant at Birth.*—Dr. Alex. Keiller describes in the *London and Edin. Monthly Journ. Med. Sci.* for Aug. last, a very curious case of intra-uterine cutaneous disease. It occurred in a male child. Its whole dermoid covering was hard, preternaturally thickened, and deeply rent, so that the child seemed as if completely enveloped in an irregular coating of cartilaginous structure. So deep were the numerous fissures in the hard and much thickened scalp, that in appearance, as well as to the touch,

they very much resembled the sutures, or rather the serrated edges of the bones, of a disarticulated adult skull.

The skin of the face, in like manner, consisted of ossified-looking portions, also irregularly fissured; the nose and ears were represented by mere tubercular knobs without apertures; the eyelids were altogether undeveloped; red fleshy-like cushions occupied the *eyeless orbits;* the mouth seemed large and gaping; the tongue was voluminous and protruding, and their ill-starred owner, as if to render his hideousness still more complete, was yelling most vociferously.

The skin of the trunk and extremities was equally hard and cartilaginous, though not so thick as that of the head and face; the rents, or cracks, were so extensive on the abdomen, that it appeared, in several parts, altogether void of dermoid covering.

The carpus and tarsus of the right extremities were apparently somewhat diseased.

The genitals, like the nose and ears, seemed a mere tubercular knob.

The child was otherwise well formed, and, judging from its size and apparent strength, more especially of its vocal organs, appeared perfectly "*viable.*"

It only, however, survived about twelve hours.

The placenta was small, soft, and easily torn.

The umbilical cord was unusually thin.

The mother made a perfect, though slow recovery, and the agitation, consequent on what she was pleased to consider as the melancholy fulfilment of her long-entertained surmises, having gradually subsided, she soon again became pregnant, an event which seemed greatly to aggravate her previous mental despondency, and to produce other nervous symptoms, for which I was frequently called upon to prescribe.

Despite, however, the continuance and fullest operation of that, by some, fœtal-staining, monster-making influence,—*a brooding, evil-anticipating, maternal imagination,*—she was in due time (on the 30th March, 1842,) safely delivered of a full grown healthy child, and has since enjoyed excellent health.

An analogous case was recently communicated to the French Academy of Medicine by M. Souty, (*Bull. de l'Acad. de Med.* Oct. 30, 1842,) and Prof. Simpson refers (*L. & E. Monthly Journ. Med. Sci.* Aug. 1843,) to four others of an analogous character, one in the Museum of Guy's Hospital, another imperfectly described by Richter in 1792, in an appendix to his *Infanticido in Artis Obs.* &c.; a third more fully detailed by Hinze in his *Kleinere Schriften*, and the fourth preserved in the Berlin Museum, and described in 1826 by Steinhausen in his *Dissertatio De Singulari Epidermidis Deformitate.*

SURGICAL PATHOLOGY AND THERAPEUTICS, AND OPERATIVE SURGERY.

23. *Treatment of Varicose Veins.*—M. Moulinie recommends the following method of operating for the cure of varicose veins, as not being attended with the bad results that not unfrequently succeed to other similar operations:—

"A fold of the skin is taken up in a direction parallel to that of the vein, and at some distance above the varicose part, an incision is then made across this fold down to the cellular tissue around the vein, disturbing the part by dissection as little as possible. An eye-probe, armed with a silk or fine thread, is then passed under the vein, and the latter is then tied. An incision is often made across the vein, a little above the ligature, for the purpose of preventing any inflammation of the vein spreading by continuity along it. The skin is then brought together by strapping, in order to protect the vein from the contact of air as completely as possible."—*Prov. Med. Journ.* July 22, 1843, from *Bonheur en Chirurgie, &c.*

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24. *Process of Nature by which Hemorrhage is stayed or prevented, and by which the permanent closing of wounded Arteries is accomplished.* By Dr. Wat-

son.—The blood in the living body consists of certain chemical ingredients dissolved in water, which solution is called the *liquor sanguinis;* this fluid contains also certain red particles diffused through it, called the *red corpuscles.*

When removed from the body, and allowed to remain at rest for a time, (from three to seven minutes,) the blood becomes altered in its form,—its constitution and chemical composition is changed. The fibrin contained in the liquor sanguinis separates from it and coagulates, but in doing so, it entangles the red corpuscles so as to collect them in a soft mass along with it. This mass or coagulum is called the *crassamentum;* and the watery solution, in which the remaining ingredients are held dissolved, is called the *serum.* While the blood in the living body, therefore, consists of liquor sanguinis and red corpuscles, the blood, when removed from the body, consists of serum and crassamentum; the difference not consisting in simple congelation caused by change of temperature or rest, but in an alteration of its chemical constitution. Now, if the blood in the living body requires a certain vital influence to be imparted to it by the arteries, in order to maintain its chemical constitution, its fluidity and motion, without which it coagulates, it must follow that coagulated blood had been deprived of that influence, for a certain length of time, during which the blood must have been at rest. If, therefore, coagulated blood is found in the extremity of an injured artery, the vital influence of the artery upon it must have been withheld, and the blood must have also been at rest for a certain length of time before coagulation could have taken place. We must, therefore, infer, that the injury had deprived the artery of the power it possessed in moving the blood and maintaining a proper constitution. Hence, the hemorrhage must have stopped before coagulation took place, and, therefore, the formation of a coagulum could not be the cause of the hemorrhage having ceased; for it must have stopped before the coagulum could form.—*Lond. and Edin. Month. Journ. Med. Sci.*, July, 1843.

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25. *Rupture of the Bladder, with Dislocation of the Thigh-bone into the Ischiatic Notch.* By James Syme.—John Aitken, aged 32, while working in a quarry, on the 10th of April, was crushed down, in a crouching posture, by a stone of nearly two tons weight. He was brought to the Hospital about six hours after the accident, which happened nine miles from town. The left hip-joint was dislocated, and there were several superficial wounds on the head. But the principal injury was rupture of the bladder, which presented the usual signs of agonizing pain in the belly, with constant desire to make water, while nothing could be extracted by the catheter, except a little bloody fluid. The scrotum was greatly distended by extravasated blood, and there was no pulse at the wrist. In these circumstances I considered it improper to reduce the dislocation, and in a few hours afterwards the patient died.

On dissection, a rent was found in the fundus of the bladder. There was also a fracture through the pubis into the foramen ovale of the right side, and separation at the symphysis pubis, as well as at the sacro-iliac junction.

When the integuments of the left hip were divided, the subjacent cellular texture displayed extensive ecchymosis. The *gluteus maximus* was nearly torn through, and the head of the thigh-bone lay imbedded in its substance, with merely a thin covering of the muscle. The pyriformis was ruptured, and the superior of the gemelli slightly lacerated. The *gluteus minimus* was so completely destroyed that its remains could with difficulty be recognised. The *ligamentum teres* was torn away close to the head of the bone, which lay upon the gemelli and sacro-sciatic nerve. The capsular ligament was extensively ruptured close to the acetabulum.

The extreme rarity of opportunities for examining the state of parts in recent dislocations of the hip-joint, renders this case worthy of notice, especially as the best authority upon the subject, Sir A. Cooper, does not appear to have had any such opportunity, in regard to displacement into the ischiatic notch. My principal reason for mentioning the case, however, is to draw attention particu-

larly to a symptom of the injury, which will be found very important for its diagnosis.

Sir A. Cooper says, "this dislocation is the most difficult both to detect and to reduce;" there being less deformity and fixture of the limb than in any of the other displacements of the thigh-bone. This obscurity is much increased by attempts to effect reduction, since a moderate degree of extension almost entirely removes the shortening and inversion, which are usually considered the most characteristic symptoms. I think it, therefore, of consequence to state, that there is another feature of the injury which, according to my experience, is never absent—always well marked—and not met with in any other injury of the hip-joint, whether dislocation, fracture, or bruise. This is an arched form of the lumbar part of the spine, which cannot be straightened so long as the thigh is straight, or on a line with the patient's trunk. When the limb is raised or bent upwards upon the pelvis, the back rests flat upon the bed; but so soon as the limb is allowed to descend, the back becomes arched as before. By attention to this symptom, I have been able to recognize the existence of dislocation into the ischiatic notch, when it had been unnoticed by others; and on one occasion, when it was supposed that the replacement had been effected through powerful extension by the pulleys. The same guide led me at once to a correct diagnosis as to the situation of the bone in the case above related, without any disturbance of the poor dying man.—*Ibid.* June, 1843.

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26. *An Inquiry into certain of the causes of Death after Injuries, and Surgical Operations in the London Hospitals, with a view to their prevention.*—Dr. Norman Chevers, in an interesting article in the April No. of *Guy's Hospital Reports*, adverts to the fact, that while the attention of surgeons has been assiduously directed to the best modes of performing operations, and treating wounds, very little notice has been taken of those serious, and frequently rapidly fatal casualties, which so often follow the most skilfully performed operations, and occur during the treatment of comparatively slight injuries. A considerable amount of knowledge of their mode of attack and their effects has been obtained; but little is known regarding their causes, and the preventive means by which they may be warded off. Although, by the many improvements in surgery, made during late years, the number of operations has been much curtailed, it is evident, that their consequences are very generally more serious than could be anticipated from the apparent degree of their severity. Statistical inquiries have done much to ascertain the ratio of fatality, the ages at which a fatal termination is most liable, and the classes of operations after which death generally takes place; and they have also shown that more is dependent on treatment previous and subsequent to the operation, than on the tact shown during its performance; but unfortunately, they do not admit of general application, owing to the effects of locality of hospitals, &c., and idiosyncrasy, on the results of operations.

Dr. Chevers inquires into the results of experience, with regard to the most frequent immediate *causes* of death in this description of cases. The causes appear to resolve themselves naturally into three distinct classes, viz. the *primary*, *secondary*, and *remote*.

1. The *primary* include all fatal accidents during, or very shortly after operations or injuries; such as, death from

Collapse,
Hæmorrhage,
The admission of air into the veins, or
The sudden occurrence of any internal lesion.

2. The *secondary* include fatal causes, liable to come into action within a few hours or days. They may be subdivided into two sets:

a. Those which appear to depend upon some obscure lesion of the nervous system; as, for example,

Tetanus,
Delirium Tremens,
Irritative Fever. [This sometimes depends on *Arachnitis.*]

b. Those which are attended with some manifest local change; such as,

Arachnitis,	Suppuration in the Liver, or other abdominal viscera,
Pleurisy,	
Pneumonia,	Phlebitis and Arteritis,
Pericarditis,	Laryngitis and Diphtheritis,
Endocarditis,	Enteritis,
Aortitis,	Secondary Hæmorrhage,
Peritonitis,	Sloughing,
Purulent Arthritis,	Erysipelas.

3. The *remote* causes comprise those which produce death after an interval of some weeks or months. The principal of these are,

Profuse Suppuration,
Secondary Fever,
Caries of injured bone, with suppuration,
Phthisis.

There are also several fatal causes, which may come into action at almost any period, between the time of the injury and the complete healing of the wound; such as, hospital gangrene, and various forms of endemic and epidemic fever.

The following remarks are chiefly directed to certain of those causes of death which are included under the *secondary* class; namely, marked diseases of various organs and surfaces (for the most part remote from the spot primarily injured) which are liable to prove fatal, within a certain number of hours or days, after operations and accidental wounds.

Morgagni observed a fact which is well known, but not sufficiently attended to, that individuals admitted into hospitals with some slight disease, who had remained a considerable time under treatment, were very frequently attacked with more serious disease than that under which they first laboured; and, in illustration of this fact, he cites the case of a man who entered a public hospital at Bologna for the cure of a slight wound in the leg; but lying next to a patient suffering from an abscess of the thigh, which afterwards proved fatal, he became the subject of pneumonia, which had supervened apparently upon malignant disease of the right lung, as appeared on dissection. Fontanus, Dupuytren, Sir C. Bell, Mr. Erichsen in the *Medical Gazette*, and others, have also observed the great tendency to thoracic disease, following accidents and operations. Cline and Abernethy published cases of death following amputation, caused by inflammation of the arteries, spreading to the aorta and heart, which had been tied. Travers, Arnott, and Carmichael, have drawn attention to inflammation of the veins. It has been found by these, and other surgeons, that the phlebitis has been in many cases accompanied by inflammation elsewhere and at a distance, as in the heart, liver, lungs, &c.; and, on the other hand, distinct evidence of similar disease has been observed in these parts, without any deviation from a healthy condition having been found in the veins. Dr. Addison has also observed the fact, that rapidly fatal peritonitis and pleurisy not unfrequently follow injuries and operations, especially when occurring about the pelvic organs.

The occurrence of pneumonia, subsequent to operations and injuries, has been generally considered to depend on confinement of the individual in a vitiated atmosphere, while, at the same time, the nervous system was in a depressed and irritable condition, and to the engorgement of the back parts of the lungs with blood induced by the recumbent posture. These causes must, no doubt, tend to excite pulmonary disease in those predisposed; but in a very slight degree, in the majority of instances, can they influence the termination. Numerous cases have occurred, in which the patients, who had been in active exercise previous to the performance of operations, and who were treated in wards in which ventilation was strictly attended to, have died speedily from most aggravated thoracic disease. Besides, we would expect to find disease in both lungs, were recumbency a cause, as each organ must be alike liable to vascular engorgement from the same cause. But this is by no means invariably the case; sometimes, portions of one lung will be affected, while the other is tolerably healthy; or one pleura will be more or less filled with effusion, while the other exhibits no

indication of recent disease. On the other hand, there are numerous instances of patients, of bad constitution, and who were treated in the worst ventilated wards of the London hospitals, and lay in the recumbent posture during their recovery from bad compound fractures, lacerated wounds, and other severe injuries, which left the patient in a state of great nervous depression, and were the sources of profuse discharge, who ultimately recovered without having exhibited any symptoms of thoracic disease. Mr. Guthrie has observed, that chest symptoms are most apt to appear in individuals whose lungs were previously diseased, and thus predisposed to fresh disorder.

Some have attributed the occurrence of phlebitis and arteritis, following amputation, to the irritation of ligatures, or some other mechanical cause; but it is well known, that the general effect of a ligature on an artery is merely to cause the effusion of lymph, at the point of deligation only; and that in healthy persons, veins are not very liable to inflammation, even although tied, incised, lacerated, or cauterized. Phlebitis and arteritis do not frequently attack patients in English hospitals; and when they do occur, they are usually seen in persons of depraved constitution, and seem to originate in some constitutional cause, which the injury has called into activity.

The circumscribed purulent depôts which have been found in the liver and lungs, in such cases, have been attributed to venous absorption, and subsequent deposition of the pus; but, while this undoubtedly takes place in some cases, there are no evidences of its occurrence in others; and besides, these collections of purulent matter are not deposits infiltrated through the texture of the organs, but distinct abscesses in which part of the original texture is broken down.

Dr. Chevers cannot, therefore, admit, that the usually received opinions with regard to the causes of these forms of disease, (as occurring after wounds and injuries,) are by any means satisfactory. It has always appeared to him that there is probably one set of definite constitutional causes, which is ever ready to call these local mischiefs into fatal action, immediately upon the individual being subjected to any kind of unusual vicissitude or injury.

In London, and all densely peopled towns, there is a large class of individuals in the lower ranks, who are continually exposed to cold and wet, while following their laborious occupations, among whom intemperance is a prevailing vice, and in whose constitutions the ravages of syphilis—in many cases neglected, in others ill treated—tell with marked effect. Although these persons may be able to pursue their ordinary avocations with tolerable ease, yet, when an accident happens to them, or they were subjected to any depressing or exciting influence which aggravates the disorder of their organs of circulation and elimination, they almost invariably are attacked with most acute and fatal inflammation of one or more of the internal organs. The state of the system, which is described above, is in general vaguely termed "cachexia;" and usually it is easy to trace its cause to some functional or structural disease of the chief eliminating organs, the kidneys, liver, and spleen.

It is almost impossible to have been long in the habit of paying close attention to the pathological examinations in large metropolitan hospitals, without observing, that a very great proportion of those who die from the secondary effects of mechanical injuries, have been the subject of some marked, and often very acute, form of renal, hepatic, or splenetic disease, or frequently of the whole of these combined. For the purpose of confirming the observations, which Dr. Chevers made at Guy's Hospital for several years past, he carefully examined the account of all the cases where death occurred from the *secondary* effects of operations and mechanical injuries of every description, which have been entered in the *post-mortem* registers of the Museum during the last fifteen years, comprising the whole of the cases in which examination of the bodies of patients so dying could be procured during that period.

One hundred and fifty-three cases of the kind were obtained from that source. Many of the subjects of these reports had undergone severe operations, or suffered from extensive accidental injuries; others had been the subjects of wounds or contusions of an apparently very trivial kind; still, the internal inflammations

which destroyed life in most of the latter cases, were generally as severe as those which proved fatal in the former instances, and frequently more so. In these 153 cases, death took place from inflammation of secreting surfaces, or internal organs, (including the kidneys, liver, and spleen,) in - 134

In the remaining 19, the patients died from other causes; such as, tetanus, sloughing, hæmorrhage, suppuration, gangrene, erysipelas, diarrhœa, and the total deficiency of reparative action in the wound; and in one of these cases, the precise cause of death could not be discovered, - 19

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In but a small proportion of the 134 cases (in which the injuries or operations were followed by the occurrence of fatal internal lesions,) the imflammatory affections generally involved several important parts, and these often at a considerable distance from each other, and from the seat of the primary injury.

In some of these cases, the accession of the inflammation may have been the necessary consequence of the injuries received. In about thirteen cases, from the nature of the injury, no hope of recovery could be entertained; but in all the others, there seemed every chance of a successful issue.

List of the Various Recent Inflammatory Lesions found in the above 134 *Cases:—*

Acute disease of the substance of the lungs, appearing in the form of inflammatory œdema, red or gray hepatization, abscess, or gangrene, was noticed in - - - - -	47 cases.
Bronchitis alone, - - - - -	2 "
Pleuritis, - - - - - -	35 "
Laryngitis and diphtheritis, - - - - -	2 "
Meningitis, - - - - - -	27 "
Inflammation, softening, or abscess of the brain, - -	9 "
Pericarditis, - - - - - -	14 "
Peritonitis, - - - - - -	52 "
Arteritis and aortitis, - - - - -	4 "
Phlebitis, - - - - - -	3 "
Suppuration in the substance of the psoas muscles, - -	2 "
Acute purulent synovitis, - - - -	1 "
Inflammation of various portions of the intestinal canal, (including cases of hernia,) - - - - -	9 "
Inflammation of the tunica vaginalis, - - -	1 "
Cystisis, - - - - - -	8 "

In this table, the numbers refer only to the frequency of the appearance of the particular disease, and not to the total number of cases. Thus, phlebitis is stated to have appeared in three cases, and arteritis in four; but there were altogether only six cases of vascular disease:—in three of which there was arteritis, in two, phlebitis, and in one, arteritis and phlebitis combined.

State of the Kidneys, Liver, and Spleen, in the 134 *Cases.*

The kidneys were observed to be in a state of marked disease, either presenting remarkable congestion, softening, mottling, or the granular or cystiform alterations in . - - - -	72 cases.
The appearances of the kidneys were not mentioned (usually from the autopsy having been only partial) in - - -	44 "
These organs were stated to be without any apparent disease in	26 "
The condition of the kidneys was doubtful in - - -	11 "
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Of the above cases, in which the kidneys were either not examined, found healthy, or considered in a doubtful state, there was marked disease of the liver or spleen, or of both these organs, in 21 cases—giving a total of 93 cases, in which one or more of these important organs was found in a state of lesion.

From the character of the symptoms, and the nature of the inflammatory lesions, of which many of the patients died, Dr. Chevers is convinced, that renal disease would, if looked for, have been discovered in a considerable number of those cases in which the state of the kidneys was not examined after death. It was observed, that of the 134 cases in which the patients died of internal inflammation, there was also superadded marked disease of the kidneys, liver, or spleen, or of all these organs combined, in 90. In a rather large proportion of these cases, the disease of the liver, spleen, and kidneys had evidently existed for a very considerable time previous to the patients receiving the wounds or injuries, which became the apparent primary cause of death; but in very many, (and this was especially observable in the renal cases,) the changes were evidently of so recent a nature, as to render it probable that almost immediately after the operations or accidents, either visceral disease had been excited from a latent to an active condition, or that a state of acute congestion had suddenly been established in organs, which had hitherto been suffering merely from chronic degeneration.

One of the chief objects of Dr. Chevers' paper, is to draw the attention of the profession to the very frequent occurrence of disease of the liver, spleen, and particularly of the kidneys, in those who die from the secondary effects of operations and injuries. The author is satisfied that the majority of deaths after operations, &c., depends upon diseases set up in these organs, and roused into activity by these accidents; and he believes that acute congestion of the kindeys, or any state approaching to that, and acute splenic or hepatic disease, especially predispose to a fatal termination even of the most trifling operation or injury. Dr. Chevers was led to this belief, by observing the great similarity of the morbid appearances, found after death from such circumstances, to those which are known to be the effect of Bright's disease of the kidneys. The kidneys are very liable to be congested during the state of vascular excitement which follows most operations and injuries; and as they are, previous to the injury, in a disordered condition, this congestion is sufficient to arrest their powers of secretion, and so gives rise to the accumulation of urea in the blood, owing to the unrelieved suppression of urine, which is followed by œdema of the lungs and cerebral effusion, if the secretion is suddenly and completely arrested; or by serous inflammations and effusions, and other serious organic lesions, if more slowly and partially suppressed.

It seems also pretty certain, that the same vascular excitement farther deranges structural disease of the liver and spleen, and so gives rise to the occurrence of morbid effusions in different parts of the body. Serious inflammations, it is well known, are especially apt to follow structural hepatic disease, and the same condition also leads to various morbid effects in other parts.

It often, but by no means invariably, appears that fatal results are promoted, by the patient's catching cold during the period of restless excitement which follows severe injuries; this, doubtless, also assists in calling renal disease into activity, where the kidneys have been previously liable to disorder, and may then, in some measure, aid in determining the occurrence of pulmonary or other inflammations. But still it is certain, that many fatal cases of thoracic inflammations, consequent upon injuries, occur, in which there is no satisfactory evidence of the patient having suffered from cold.

The foregoing remarks help us to an explanation of the fatal termination, in those individuals who were previously able to go about their ordinary occupation without inconvenience. In all of these, the abdominal organs have been the seat of some of the derangements mentioned above, and these have been aggravated by the operation or injury, although slight. The mode of attack, the symptoms, and the morbid appearances after death, of these secondary inflammatory affections, bear the closest resemblance to those fatal inflammations which occur in persons labouring under albuminous nephritis; and the chief difference in these cases seems to be, the immediately exciting cause which induces them. It is probably neither to the severity of the operation or injury, nor to the irritation which it creates in the nervous system; neither to the effects

of bad ventilation, nor of long confinement; nor, in fact, to the action of any other general cause, that we are principally to ascribe the predisposition of this class of patients to the fatal lesions under consideration; but rather to the influence of a diseased state of the abdominal organs, to which their previous habits of life have long been subjecting them. It is highly probable, that in most of the individuals who thus perish, even if they had never become the subjects of any wound or injury, some other vicissitude would, by bringing the renal or hepatic mischief into active operation, have equally determined the occurrence of fatal cerebral, thoracic, or abdominal inflammations.

The causes of arteritis and phlebitis following amputation, are considered yet uncertain by surgeons. The idiopathic forms of these diseases very generally occur along with Bright's disease of the kidneys, and may be ascribed to the tendency to inflammation in the serous tissues, which exists during the progress of renal disease. Of the six cases mentioned in the table, in five, marked structural lesion of the kidneys was found.

Although it is not generally known, it appears true, that secondary hæmorrhage is very apt to follow operations, in those persons in whom renal disease exists. The occurrence of this hæmorrhage seems to depend upon the morbid state of the blood, its highly azotized condition, and the non-formation of a plug, by the coagulation of the blood, and the effusion of lymph.

Besides producing the tendency to hæmorrhage, the existence of renal disease is apt to cause a fatal termination in other ways. Thus, persons having old strictures of the urethra, are liable to be seized with shivering, vomiting, quick pulse, without much local pain, and die from peritonitis, cystitis, or other inflammation, &c. In such individuals, inflammatory œdema of the lungs, and cerebral effusion, not unfrequently are the causes of death. An acute form of Bright's disease sometimes attacks persons suffering from stone in the bladder; and if lithotomy is performed, the patients are very liable to be seized with fatal inflammation of the serous and other structures, and are subject to secondary hæmorrhage. It is not uncommon for persons labouring under syphilis, to be suddenly attacked with acute œdema of the glottis, purulent laryngitis and diphtheritis, or most severe inflammation of the thoracic and abdominal viscera, and be cut off by these accidental diseases; and it will generally be found, that the persons so destroyed have been of intemperate habits, have been ill treated with mercury, and have become the subjects of Bright's disease.

Dr. Chevers requests that it must be observed, that his observations chiefly apply to the causes which, during a long series of years, have led to fatal results in Londoners of the poorer classes, in tolerably ventilated hospitals, where the chances of death after operations appear to depend almost entirely upon the previous state of each patient's constitution.—*Lond. and Ed. Monthly Journ.* Aug. 1843.

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27. *Anatomico-Chirurgical Observations on Dislocations of the Astragalus.*—Mr. Turner in an interesting paper in the eleventh vol. of the Trans. of the Prov. Med. and Surg. Association, discusses this subject under the following heads:—

1. What are the anatomical relations of the astragalus, and in what manner do they influence the accidents to which this bone is liable?
2. By what powers, or kind of forces, are dislocations of the astragalus produced?
3. In what direction can the astragalus be luxated?
4. What forms of luxation are, and what are not reducible?
5. What are the obstacles to reduction in most cases?—and lastly,
6. Since reduction is impracticable, in almost all cases of dislocation of the astragalus, by what principles are we to be governed in the treatment of this accident?

Under the first of these heads Mr. T. considers very fully the anatomy of the astragalus and its connections. His observations under this head are valuable, and well worthy of perusal.

Under the second head, he considers the motions of the astragalus, and the operation of forces, in the production of its dislocations.

Under the third head, he enumerates the directions in which the astragalus has been dislocated. These, according to recorded and communicated cases he enumerates as follows:—

Forwards.
Forwards and inwards.
Forwards and outwards.
Upwards and outwards.
Outwards.
Inwards.
Backwards.
Outwards, downwards, and backwards.

Mr. T. next treats at some length the "Relative Anatomy of the different dislocations, as producing the signs, and influencing the results of these accidents." This he very properly considers a subject of much importance, inasmuch as it not only teaches us the signs of the different forms, directions, and kinds of luxation, but enables us to understand the mechanical difficulties which the contact of irregular processes and concavities opposes to its reduction. Our intention at present is to call attention to, rather than give an abstract of, Mr. T.'s memoir; we shall not, therefore, attempt to follow him in his description in this part of it.

Mr. T. illustrates the subject by a detail of the most interesting and instructive points connected with published and unpublished cases of these accidents—of which, after much labour, he has collected forty-five cases. He has arranged them in tabular forms. The first is framed with the view of comparing the relative frequency of the various forms, courses, and kinds of dislocation, in the different regions of the foot.

From this table it appears, that in this number there are of

Simple Cases.

Partial..... 3	Without..... 2	3		
	With fracture... 1			
Complete... 21	Without..... 13	21		
	With fracture... 8			

Compound Cases.

Partial..... 2	Without..... 2	2		
	With fracture..... 0			
Complete... 19	Without..... 13	19		
	Without fracture..... 5			
	With dislocation of ankle... 1			

thus proving, that there is no great disparity in numbers, between the simple and compound cases. From the same table it is seen, that dislocations on the anterior aspect of the foot are more numerous than all the rest put together; there being 25 on the anterior, 6 on the inner, 7 on the outer, and 7 on the posterior region of the foot. Some of the examples recorded were accompanied with fracture of one or both bones of the leg, and in one instance, with fracture of the os calcis. These complications do not appear to render the accident more formidable in its character; on the contrary, it would appear, according to Mr. T., from the cases given, that the fracture rather offers facilities to the reduction of the dislocation. In the cases complicated with fracture, the dislocation is more frequently simple than compound, in the proportion of 9 to 5, a circumstance explicable on the division of force between the two effects.

In the second table, Mr. T. gives a classification of the treatment and results of dislocations of the astragalus; we would refer the reader for more particular information, to the original tables, the following is the summary of results:—

NO. OF CASES.	RESULTS.		
2 Partial reduction	Permanent inflexibility	1	2
	Tolerable motion	1	
6 Complete reduction	All did well, with tolerable, and in some with perfect motion		6
10 Bone allowed to remain in its new locality	Anchylosis	1	10
	Deformity and impaired motion	2	
	Imperfect motion	1	
	Result not published	1	
	Useful foot.. (all backwards)	5	
6 Partial excision	Deformity and permanent lameness	1	6
	Deformity, with a tolerable foot	1	
	Anchylosis	1	
	Useful foot	3	
18 Complete excision	Anchylosis	1	18
	Useful foot	13	
	Death	4	
In 10 the operation was immediate — 1 on the 2d day — 1 on the 11th day — 1 after 4 weeks — 1 after 33 days — 1 after 10 weeks — 2 after 14 weeks — 1 after 7 months	Simple cases	3	18
	Simple and complicated	3	
	Compound cases	10	
	Compound and complicated..	2	
4 Amputation	Recovered	3	4
	Not recorded	1	

46 Total.

By this table, it is shown, that the success of the partial reduction is, as might have been expected, less favourable than complete reduction. That in dislocation backwards, the sequel of allowing the bone to remain in its new situation, has been most satisfactory; but not so in dislocations in other directions. Partial excision left a useful foot, in three out of six cases; in the remaining three, there were deformity, lameness, and anchylosis.

The results of complete extirpation of the bone have been very encouraging, when we consider the desperate character of the accident which demands this formidable mode of procedure. In thirteen out of eighteen, a very useful limb remained; in one only was there true anchylosis; and death occurred in four cases. In no simple case was there a fatal result.

Mr. Turner next considers the principles of treatment in dislocations of the astragalus, and first as to reduction, he concludes, that, "if the astragalus be partially dislocated, and not twisted round, as it often is when dislocation is complete, there is reason to hope that reduction may be accomplished." That in complete compound dislocations of the astragalus alone, without fracture or solution of continuity and connection in the bones and joints of the tarsus, all attempts at reduction are not only hopeless, but prejudicial, and although we may be justified in hazarding the chance of allowing the bone to continue in its new situation when the luxation is simple, extirpation ought always to be performed when the accident is of a compound kind. The author's conviction is, that the astragalus, when completely dislocated, without fracture, disjointed tarsal bones, or dislocation of the ankle, is an irreducible dislocation, and that all attempts at accomplishing reduction are worse than useless.

The author next considers the practice of allowing the astragalus to remain in its new situation. He comes to the conclusion that, in luxation backwards,

we are not to interfere, except by making reasonable efforts at reduction, inasmuch as in all cases detailed, except one, the cases were left to nature, and did well.

In partial cases, whether simple, or simple and complicated, should attempts at reduction fail, there must be no operative interference. In partial and compound, or compound and complicated cases, reduction failing, excision of the protruded portion of bone should be performed.

Complete excision of the bone is recommended by the author in complete compound luxation. In simple, direct, and complete luxation, he advocates the practice of allowing the bone to remain in its new situation, until it manifests a tendency to ulcerate the skin, in which case he would make an incision over the bone to relieve tension and pressure, and when the bone is so far detached from the circumjacent textures, by the natural process of separation, he would remove it.

The question of amputation, he says, is one which *a priori* we should consider as often called for; but miraculous as it appears to be, it is nevertheless true, that it need seldom be seriously entertained. For furthur information as to the author's opinions on this head, as well as to all the others, we would refer the reader to the original memoir, which is well worthy of the attentive perusal of every practical surgeon.—*L. and E. Month. J. Med. Sci.* Aug. 1843.

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28. *Wound of the Left Ventricle of the Heart.*—Wm. Baird, Esq., relates a very interesting case of wound of the left ventricle of the heart, in which the subject of it, a man, after receiving the mortal wound, which was followed by copious effusion of blood internally, continued to make great exertions, both in running and fighting—appeared to suffer little pain from so severe an injury, and lived half an hour after the receipt of the wound, dropping down dead at last from exhaustion after running or walking 150 yards.

On examining the body the next day, "two penetrating wounds were discovered on the left side of the chest, with sharp and well-defined edges. The upper wound was one inch in extent, running obliquely between the third and fourth ribs, at a distance of $4\frac{3}{4}$ inches from the centre of the sternum, and of $4\frac{1}{2}$ inches from the clavicle. The lower wound was half an inch in extent, being situated obliquely between the fifth and sixth ribs, at a distance of $5\frac{3}{4}$ inches from the centre of the sternum, and of $8\frac{1}{2}$ inches from the clavicle. On dissecting back the common integuments and the muscles, the lower margins of the third and the fifth ribs were seen slightly marked by the cutting instrument. When the chest was laid open, three pints of blood, partly fluid and partly coagulated, were found in the cavity of the left pleura, and the lung on this side of the chest was compressed to less than half its usual size. The lower wound had penetrated the pericardium, and passed through the entire thickness of the wall of the left ventricle of the heart, at the lower part of its middle third. It was still half an inch in extent, and transverse in its direction. The pericardium contained only a small clot or two of blood.

"The upper wound had grazed the outer coat of the aorta, $2\frac{1}{2}$ inches from its origin—producing slight ecchymosis around.

"The lungs were healthy—their depending portions being slightly gorged with blood. The stomach was distended with fluid, giving out a strong spirituous odour, and with the remains of half-digested food; but it was quite free from disease. The liver and other abdominal viscera were healthy. On opening the head, there was discovered some engorgement of the veins of the pia mater, but only in the depending parts. The brain was healthy. The ventricles contained no fluid.

"No other wounds or contusions were observed on the body, except the two described above."

The blade of the knife with which the wounds were inflicted, was three inches long, and half an inch at its broadest point, gradually tapering to the point. It filled exactly the lower wound. The upper wound was probably dilated in withdrawing the instrument.—*Lond. and Edin. Month. Journ. Med. Sci.*, April, 1843.

29. *Anatomical Lesions of the Nervous System in Tetanus.* By M. Imbert Gourbeyre.—A person who died of tetanus at the Hotel Dieu presented the following morbid lesions of the nervous system. Numerous ecchymoid spots were noticed on the external surface of the dura materal covering of the spinal marrow, and a collection of liquid blood occupied about five inches of the lower extremity of the spinal sheath. The spinal marrow was shrunk and softened in its two upper thirds. and the pia mater could not be dissected from it at this part, it adhered so closely to the softened spinal cord. This softening continued to the level of the occipital hole, and ended at the anterior pyramids. The anterior and middle lobes of the left side of the brain were found also softened, and the vessels of the pia mater were injected over the same part. The tetanic affection had come on after a fracture of the limb. The corresponding sciatic nerve was found to be finely injected, and faintish ecchymosed spots were here and there remarked.

M. Gourbeyre has collected a few facts on the same subject from the observations of others, both physicians and veterinary surgeons, from which it appears that softening of the cerebro-spinal axis, and especially of the anterior columns, with effusion of blood into the spinal canal, are of pretty general occurrence in tetanic affections. Inflammation of the nerve, leading from the injured part, which was the cause of the tetanic affection, as characterized by injection of its blood-vessels, occasional scattered ecchymose spots, a dead lustre, and occasional softening, were also frequently observed.—*Ed. Med. and Surg. Journ.*, July, 1843, from *Archives Générales*, April, 1843.

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30. *On Lateral Curvature of the Spine, and the case in which it may be remedied by Operation.* By James Syme, Esq.—When some time ago it was proposed to cure lateral curvature of the spine by dividing the muscles of the back, and when cases in which this preposterous practice had been adopted were published, every honest and well-informed member of the surgical profession must have experienced the strongest feelings of disgust and indignation. The only consolation was, that the absurdity of the proposal could not be long overlooked, even by the public, and would prevent much mischief from being sustained, until the salutary influence of time over such follies should interpose its usual protection of forgetfulness. But though years have passed, I still find that the hopes so improperly excited have not yet been abandoned, and am frequently placed in the painful situation of declining to perform operations for curvature of the spine on patients who had been led to expect complete and immediate relief from this source. The object of the following remarks is to discourage all thoughts of an operation in the ordinary form of the disease, and to point out one particular case in which the only remedy is afforded by the knife.

In tracing the origin of lateral curvature, it is not easy to determine whether the muscles or the bones should be considered chiefly in fault. The former, through weakness or bad habits, allow the spine to assume a bent shape; and the latter, from deficiency of their ordinary rigidity, yielding to the unequal pressure thus occasioned, suffer a corresponding distortion. Sex, age, and tight lacing, may conduce to these effects; but they are doubtless promoted in no small degree by the enervating influence of modern education, which strains and over-fatigues the mental faculties, at a period of life when energy of body, moral sentiments, and powers of observation should rather be cultivated. This pernicious system not only destroys the appetite for wholesome duty at its proper season, but seriously endangers health, and in all probability contributes to the present frequency of spinal complaints.

So long as the bones preserve their natural forms, the patient, by a voluntary effort, or by assuming the horizontal position, can at once make the curvature disappear; and if care be at this time taken, by attention to the general health, the disuse of stays, avoiding sitting or standing still, and frequently reclining on a flat surface, the distorting process may be easily and certainly arrested. It too frequently happens, however, that when a medical man is consulted at this stage of the complaint, finding the bones unaltered in shape, and the spine

readily straightened, he is misled to form and express the opinion, that there is nothing really wrong. He attributes the apprehension to over-anxiety, and dismisses the case with the comforting assurance, that it will soon be all right. At length the bones do give way—the curvature can no longer be redressed, the ribs become flattened, the sternum projects, and the sad truth being then too apparent, means of remedy are sought for on all sides. But the time for beneficial interference has unhappily gone by. The exercises which formerly might have *prevented* the curvature, must now tend to increase it, by the superincumbent pressure of the head and shoulders, while the invigorating measures which might have fortified the bones against the distorting influence, must confirm them in the faulty forms they have assumed. Mechanical support in the erect posture is worse than useless, since it impairs the muscular power that remains, without effectually relieving the trunk from pressure; and the complicated apparatus for effacing the deformity, by pulling, squeezing, and exercising in the horizontal posture, though certainly more plausible in theory, if I may judge from the results of their trial in practice that I have happened to witness, owe more of the credit placed in them to the confident statements of their respective projectors, than to the improvement they have actually accomplished.

It is no wonder, then, that when an operation for the cure of confirmed lateral curvature was proclaimed as safe, speedy and effectual, the hopes of all interested in the complaint were powerfully excited. This operation consisted in dividing certain muscles of the back, on the contracted state of which it was alleged the distortion depended. But nothing could be more erroneous than this view of the case, since the muscles throughout its production and existence are entirely passive. They from the first do not draw the spine awry, but allow it to bend, their fault being weakness, and not undue contraction, so that those requiring to be corrected are seated on the convexity of the curve, instead of its concavity, and it is needless to add, could not be strengthened by division of their substance. The operation, therefore, should be banished from respectable practice, and if it survives this merited disgrace, be committed to those members of the profession who are base enough to take advantage of their patients' credulity for the sake of gain or unworthy notoriety.

But there is one particular condition of the complaint certainly not common; yet judging from the number of cases that have fallen within my own observation, I should say not extremely rare, in which complete relief may be afforded by the division of a muscle, and in no other way. I allude to spinal curvature depending upon wry-neck caused by contraction of the sterno-mastoid. This muscle is liable to contraction, both spasmodic and permanent. The former does not, so far as I have seen, affect the shape of the spine, and in two cases treated by division, did not yield to the operation. But the latter is apt to produce lateral curvature in every degree, and may be remedied with no less ease than certainty by subcutaneous incision.

Wry-neck, like club-foot, is sometimes congenital, but much more frequently, like squinting, and the *pes equinus*, occurs during childhood, in connection with some inflammatory or feverish state of the system. It depends upon a contracted state of the sterno-mastoid muscle, which has usually the feeling and appearance of a tense cord stretching from the clavicle to the ear. The head is bent towards the side affected, the face being turned in the opposite direction. Until the introduction of subcutaneous incision, the treatment of this complaint was very defective, since it consisted either in the use of mechanical support, which did little, if any good, or in cutting across the contracted muscle, together with its superjacent integuments, which was a painful and bloody operation, leaving a large sore, slow to heal, and apt to renew the evil during cicatrization. The subcutaneous process requires merely a puncture of the skin, is not attended with pain or bleeding, needs no dressing or after-treatment, and at once affords the relief desired. The following is the first case on record of its performance in Great Britain, which I extract from my tenth report of the Edinburgh Surgical Hospital.

"*Wry-neck depending on contraction of the Sterno-Mastoid remedied by division of the Muscle.*—Matthew Cullen, aged six, Dunbar, admitted November 2, 1832. The head was much inclined to the left side, and could not be elevated, owing to the rigid contraction of the left sterno-mastoid, the sternal part of which felt like a tense cord. The complaint had existed upwards of twelve months, and had resisted blisters, with other similar means of remedy. In these circumstances, it was thought necessary to divide the contracted part of the muscle. This was effected by entering a sharp-pointed narrow knife a little to the inner side of its tracheal margin, about an inch above the clavicle, and then pressing the blade against the tense fibres. A sudden snap, which shook the patient's frame, was immediately perceived, and all trace of the contraction disappeared. The knife was withdrawn, and the small puncture occasioned by it in passing through the skin afforded the only perceptible indication of what had been done. No pain or other bad consequence followed, and the cure might be regarded as at once complete."—*Ed. Med. and Surg. Journ.*, p. 115.

In the case just related, the disease existed in its simplest form, and without any affection of the spine, which is seldom wanting. It proceeds from involuntary elevation of the shoulder on the side affected, to lessen the strain on the head. This necessarily gives the dorsal part of the spine a corresponding convexity; and the lumbar portion bending in an opposite direction, to preserve the balance of the trunk, there results a lateral curvature, in no respect different so far as regards appearance, from its ordinary condition. I was asked, along with Sir Charles Bell, to see a young gentleman suffering from lateral curvature. Finding the right sterno-mastoid very much contracted, I proposed to divide it, and did so with the effect of redressing the spine immediately, so that before we left the house the youth was walking straight.

But if the distortion be permitted to continue, it sooner or later, as in the ordinary form of the disease, leads to alteration in the shape of the bones. The bodies of the vertebræ are compressed, and the sternum projects. In this case, of course, the operation cannot afford the same instant relief that follows its performance while the curvature depends merely upon muscular action. The head, however, is at once set free, to the patient's great comfort; and through the gradual improvement of time, the trunk, unless arrived at full maturity, may in a great measure regain its proper conformation. A few weeks ago, I saw, with Mr. Cruickshank, of Hill Place, a young lady from this neighbourhood, on whom I performed the operation in January, 1841. The back and ribs were then so much distorted, that I hardly ventured to hope for much improvement, especially as the patient was twenty years of age. It was therefore an agreeable surprise to find, instead of the low, thin, sallow, crooked, sickly-looking girl I had formerly seen, an erect, fresh-coloured, happy, healthy-looking young woman.

There is still another condition of the complaint, of which I may mention an instance that came within my notice last summer, in the case of a boy who was brought from the country on account of lateral curvature. Observing that his head inclined to one side, I examined the sterno-mastoid, and found it, not tense and rigid as I expected, but soft and yielding. I perceived, however, that when an attempt was made to raise the head, the muscle resisted and became tense, and therefore concluded that it was the seat of the evil. Under this impression, I proceeded to divide it, and succeeded in doing so, though with more difficulty than usual, from the want of tension, for which it was necessary to compensate by stretching the neck. A good effect was immediately perceptible, and the following day the patient's back was comparatively straight, which it has since, I am informed, become completely.

In concluding these remarks, it may be well to warn against mistaking for wry-neck depending upon muscular contraction, the distorted position of the head which proceeds from caries between the occiput and atlas. The latter disease, like the former, usually occurs in young persons, presents to a careless observer similar symptoms, and if confounded with it, leads to treatment not only useless, but extremely injurious. A young gentleman had for twelve

months used friction and exercise under the instruction of a distinguished member of the profession, who supposed that he laboured under wry-neck from contraction of the sterno-mastoid. No benefit having been experienced, it was thought that an operation might be serviceable, and with this view I was asked to see the patient. He presented all the characters and well marked symptoms of *spondylarthrocace*, or caries at the occipito-vertebral articulation, in a stage so advanced, that there was nothing left for me but to explain the nature of the case and predict the fatal termination, which soon afterwards happened.—*Lond. and Edin. Month. Journ. Med. Sci.*, April, 1843.

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31. *Paralysis of the Bladder, cured by the Tincture of Cantharides.*—A patient was lately admitted into the Hôpital de la Pitie with paralysis of the bladder, for the relief of which all ordinary methods of treatment had failed. M. Lisfranc ordered the direct application of tincture of cantharides to the bladder by the following mode:—One drop of the tincture was let into the organ through a catheter, and followed by an injection of simple luke-warm water. Next day two drops were similarly instilled, and the like operation was repeated night and morning for several succeeding days, an additional drop of the tincture being added on each successive occasion. By this method of treatment a cure was soon effected. M. Lisfranc found no perceptible local irritation to result from the use of the tincture in an undiluted form, while the direct application of the remedy to the organ affected was clearly preferable, in every respect, to its internal administration.—*Lancet*, May 1843.

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32. *Removal of the Patella.*—Mr. W. G. Condgon relates in the *Lancet* (Ap. 22, 1843), a case of comminuted fracture of the patella with extensive laceration of the integuments, produced by the patient, a woman 38 years of age, being thrown from a cart. When seen by Mr. C. the day after the accident, he found the patella broken into five unequal parts, two of which were considerably comminuted, with an extensive external wound. The general state of the patient at the time was very unsatisfactory, the entire limb being much swollen and the patient in great pain. The whole patella was at once removed; the wound suppurated abundantly for a fortnight, and after the application of a few leeches, was healed by means of adhesive plaster and graduated compresses. In two months the patient had so far recovered as to be able to walk, and a few months afterwards she was able to follow her usual occupation, the surface of the knee having quite healed.

The necessity for the removal of the patella does not strike us as very evident.

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33. *Spontaneous Cure of Uterine Polypus.* M. Marchal (de Calvi) exhibited to the French Academy of Medicine, Jan. 31, 1842, a polypus of the uterus which had been spontaneously detached. The history of the patient was as follows:—A woman, aged 48, was affected during three years with frequent attacks of metrorrhagia, accompanied with pains in the pelvis. The physician in attendance suspected inflammatory congestion of the uterus, and directed leeches to be frequently applied to the hypogastrium, and the use of baths, with perfect rest, &c. The patient, who was of very active habits, neglected this last injunction. One day while she was herself preparing a bath, she experienced, while in the act of lifting up a very large kettle of water, a tearing sensation, and a feeling as if something was ruptured deep in the genital organs, and perceived that something escaped through the vulva. On examination, this substance was found to be a polypus, exclusively formed of the tissue of the uterus. The polypus presented a body and a peduncle, is three centimetres long, and two broad. The peduncle is smooth on one aspect, but presents on the other a laceration, which evidently shows the way in which it was separated.

This case M. Marchal considers as unique, so far as the mechanism of the separation of the polypus is concerned. There are many examples of the spontaneous fall of polypi. MM. Hue and Hervez de Chegoin have, among others, each recorded a case of the kind. But in both these cases, the separation of the

polypus was simply due to ulceration of its pedicle, and not to traumatic rupture. M. Marchal refers the mechanism of the expulsion in this case to the pressure of the intestines forced by the effort into the cul-de-sac of the peritoneum, and acting from behind forwards on the pedicle of the polypus.—*Lond. & Edin. Month. Journ. Med. Sci.*, April, 1843.

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34. *Foreign Bodies in the Air-passages.* By Mr. Pitcher.—A little girl, two or three years old, whilst playing with a pebble, suddenly swallowed it, and it was thought it had passed into the trachea. The child, however, continued playing about in perfect health, and there was not the slightest indication afforded by the stethoscope that a foreign body was in the air-passages. She had occasional fits of coughing, and after one of these, more violent than usual, was brought to him. He wished to see her during a paroxysm; this, however, he did not do, for shortly after the child fell dead, while in a fit of coughing. A rounded pebble was found in the rima glottidis, and there was a slight appearance of inflammatory action at the bifurcation of the trachea. It would appear that the foreign body had been playing up and down the trachea for weeks, and had at last become fixed in the rima glottidis. In this case a tracheal opening would have saved the patient. In the case of a child, three or four months old, who was being nursed under a hedge in a hay-field by a very young child, the infant was suddenly seized with a croupy kind of breathing, and its face became bloated. The child was treated for acute laryngitis, and died. A piece of cabbage-stump, lying obliquely between the vocal cords, was discovered after death. If the presence of this body could have been detected during life, laryngotomy could have been performed with a successful issue. These two cases had made an impression on his mind, and he felt determined, should a case warranting interference occur again, to resort to operative procedure. Some time afterwards he was requested by a surgeon to see a child who was supposed to have a tamarind-stone in the trachea. There were no symptoms of its presence, however, in this tube; the child remained well, and there was no irritation. An opening was made in the child's trachea and forceps introduced into the tube. No stone could be detected. The child fell into bad health, and acute bronchitis came on. It then became a question whether the bronchitis had not been induced by the opening in the trachea, and it was thought advisable to close it. Previous to this being done, however, the late Dr. Thomas Davies was consulted. He thought, after a most careful and minute examination, that the tamarind-stone had not passed into the trachea at all, and that the aperture should be closed. This was done, the child rallied for a short time, but soon sank and died. On examination after death the tamarind-stone was found imbedded in the upper part of the right lung, having passed through the right bronchus. The lung was one mass of disease, and in quite a pulpy condition.—*Lancet.*

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35. *Dissecting Aneurism of the Thoracic and Abdominal Aorta.* The following example of this is recorded by Professor Wm. Henderson in the *Lond. and Ed. Month. Journ. Med. Sci.* for July 1843.

Margaret Robertson, aged 60, the mother of two children, was admitted into the Royal Infirmary, August 13, 1842. Her intelligence and memory appeared so imperfect, that little reliance could be placed on the scanty account which she gave of the history of her illness. All that could be ascertained was, that she had been affected for two or three months with the disorder of her breathing, and the dropsical infiltrations to be described, and that the former had been more considerable of late than formerly.

Her inspirations were short, and the expirations somewhat prolonged. There was inconsiderable œdematous swelling of the face, which was moderately coloured, a good deal of œdema of the feet and ankles, as well as a little of the thighs. She was ordered to take small doses of powder of digitalis with squills; and the further examination of her case was deferred.

12*th September.*—Within the last few days her complaints have considerably increased, and the following more particular circumstances of her symptoms

have to be recorded. There is much dropsical swelling of the lower extremities, and of the hands, and her urine is very scanty. There is considerable prominence of the sternum, and adjacent cartilages of the ribs, from the first to the sixth rib, which she says has always existed. The act of inspiration seems to be performed almost entirely by elevation of the ribs; the expiratory motion is prolonged as formerly, and the number of respirations is 36 in the minute. On the greater part of the chest the percussion-sound is unusually resonant, and the murmur of respiration is very feeble. On the extreme lateral aspect of the left side of the chest, from the level of three fingers breadths below the axilla, down to its lowest part, the percussion-sound is dull, and the ordinary respiratory murmur is supplanted by a few subcrepitant râles, succeeded during each inspiratory effort, by short puffs of bronchial respiration. The dull percussion-sound extends round towards the back, and exists over the lower half of that aspect of the left side; and dry bronchial respiration, especially during the prolonged expiratory acts, is strongly marked over all the dull space. There is also strong bronchophony over the same extent. The pulse is 100, small and regular. She has been lying on the left side, and the integuments of that side are œdematous. The dulness of percussion in the region of the heart extends up to the third left cartilage, and to a nearly corresponding level on the sternum. The impulse of the heart is not particularly strong, excepting at the lower third of the sternum, and the point at which the apex strikes cannot be defined. The first sound of the heart presents nothing unusual, while the second sound has a remarkable intensity and clearness. This character of the second sound is chiefly distinguishable on the lower third of the sternum, and between the second and third left cartilages, yet is sufficiently observable on the fourth, fifth, and sixth cartilages of the same side, but on the upper half of the sternum it is less distinct than in these several situations. On the back, and especially on the left side, the second sound is audible to an unusual degree. She expectorates an inconsiderable quantity of yellowish mucus, mixed here and there with dark blood.

Her exhausted state did not admit of active treatment, yet after a small evacuation of blood from the arm, and other ordinary remedies, her breathing became, for a time, considerably relieved, and the signs of pneumonic condensation of the left lung gradually decreased, until, on the 6th of October, it was remarked that the extent of the dull percussion-sound on the back had become much lessened. The dyspnœa, however, did not long continue improved, and became latterly so considerable as to make a half upright posture of the trunk necessary, and for more than a fortnight before her death, which occurred on the 9th of October, the anasarcous swelling had become very considerable and extensive, until lessened by discharge from accidental abrasions on the lower extremities. She continued to expectorate blood, almost daily, mixed with yellowish mucus, and small ecchymotic spots appeared latterly on the upper extremities. With the increased difficulty of breathing, the pulse became very small at the wrist, but continued regular, did not exceed 100 in the minute, and did not beat less frequently at the wrist than in the region of the heart. The qualities of the urine were ascertained on the 16th September, on which day twenty ounces were voided, having a specific gravity of 1013, a good deal of yellow sediment, and inconsiderable coagulability.

Autopsy.—The body was examined on the 11th of October. For two or three inches from its lower margin, the left lung was found dense, and when divided, it yielded abundance of frothy fluid, and exhibited several solid masses infiltrated with a more consistent and yellowish liquid. The lower part of the right lung, on its diaphragmatic aspect, presented similar yellowish masses—the result of sero-purulent infiltration. At several points, but chiefly in front, the lungs were emphysematous.

Both ventricles of the heart were in a state of excentric hypertrophy, the left without increased thickness of the walls, the right, with a moderate increase of thickness. The valves were sound, with the exception of those of the aorta, which were a little thickened and indurated at their edges of attachment. The

aorta was removed, and the following account of its condition was drawn up at a subsequent period.

It is of moderate size, from its origin upwards; and exhibits very little disease on its inner surface. What disease does exist amounts merely to a few inconsiderable yellowish elevations. On the fore part of the vessel, a little beyond the origin of the left subclavian, there commences a slit in the coats, extending an inch and one-tenth in the direction of the axis of the vessel. From this opening, throughout its whole extent, the aorta consists of two canals, the one consisting of the old channel, the other of one exterior to it, on its left side chiefly, but partly also on its front, and communicating with the old channel, both by the slit already noticed, and by another a quarter of an inch long, running in the same direction, and commencing near the termination of the larger. The new channel extends half an inch beyond the origin of the left common iliac artery, and opens into it by an elliptical transverse aperture, occupying about one half of the calibre of that vessel. The new channel does not open into the right common iliac, but ends at the commencement of it in a blind extremity. The slits in the aorta have smooth and polished margins, and form narrow ellipses, each bounded at either extremity by an acute curve, firm, sharp, and polished. The partition between the new and old channels in the left iliac terminates in a sharp semi-lunar edge, equally firm and smooth as those of the slits in the aorta.

Almost exactly one longitudinal half of the aorta, from the superior fissure downwards, has been dissected so as to form the new channel. The latter is nearly of a uniform size throughout the thoracic portion, becomes a little dilated as if in progress to the formation of a pouch, just above the origin of the renal arteries, and it is at that point only that blood exists in the course of that channel. The blood is in small quantity, and consists of coagulated and discoloured fibrine chiefly, adhering with some degree of firmness to the exterior wall of the channel. Below the dilatation, the canal resumes its uniformity of size and figure. The thoracic portion lies less in front of the old channel than the abdominal does, which gradually turns to the fore-part of the vessel, so as to terminate near the origin of the iliac, as described. The septum between the old and new cavities presents a moderate convexity towards the latter, so that a transverse section of the two resembles that of the two ventricles of the heart, the left representing the old, and the right, appearing, as it does, to embrace the convex interventricular septum, representing the new channel. The inner surface of the latter is of a dull yellow colour, and is much roughened by the opaque clay coloured prominences, and atheromatous patches common in diseased arteries. The interior of the old vessel is less extensively diseased, yet is in not a few places gently elevated into longitudinal and transverse patches of a yellow colour. Near the point where the outer wall of the new channel meets the septum between the two, are, here and there, short cylindrical cords passing from the latter to the former. These cords are dense and yellow, and, though without interior canals, are manifestly, from their situation and the minute dimple, corresponding to each on the inner surface of the old vessel, the intercostal and lumbar arteries obliterated. In some places these arteries seem to have been torn away by the force which separated the outer wall of the new channel, from what is now the septum, from their attachment to these coats of the artery of which the latter is composed; for small apertures only remain along the side of the septum, here and there, to mark the points at which the arteries had been given off.

A membrane, firm and easily demonstrated, lines the new channel throughout its whole extent. That it is a membrane, new, and proper to the adventitious canal, is shown by the circumstance, that it can be separated transversely in a stripe continuous from the outer wall to the septum, and so round the whole inner surface of the canal, and of course across the angles at the point where the outer wall and the septum meet. The walls of the old and new channels are firm and dense, and the following arrangement of the tunics can be easily traced on the cut surface of a transverse section of the two.

1*st*, There is an external coat, common to the two channels. 2*d*, A thicker

layer, having transverse fibres, and constituting the middle coat of the artery, splits into two at the sides of the new channel, the one layer forming the chief part of the thickness of the septum, the other and thinner forming a middle coat to the outer wall of the new channel. 3*d*, Each channel has a lining membrane of its own,—that of the new being the thicker and firmer of the two, and when a slip of it was examined by means of a pretty high magnifying power, it exhibited a fibrous structure having a close resemblance to that of the *ligamentum nuchæ* as figured in Gerber's General Anatomy; and easily distinguishable from that of the middle coat of the artery. The fibres had a somewhat oblique transverse direction.

It thus appears that each channel is invested by three tunics, the septum being of course common to both. In fact, so perfectly does the new channel resemble an artery in its structure, that it does no violence to the truth to regard the aorta, from the left subclavian to the iliacs, as having been converted strictly into a double artery.

The case of which the foregoing particulars have been detailed is interesting, chiefly on account of the anatomical changes which had occurred in the aorta. The symptoms and physical signs of disease connected with the organs of circulation, were not of a kind to throw any light on the nature of the disease which existed in the vessel. The loud second sound that proceeded from the valves of the pulmonary artery, which appeared very clearly to be the source of it, from the limits which it presented in front, gave evidence, along with the increased energy of the impulse at the lower extremity of the sternum, that the right ventricle was hypertrophied, a condition which appeared to be connected with the emphysematous state of the lungs. There was no ground to conclude, from the character of the signs and symptoms, that any disease existed in the aorta. On examining the vessel, however, after death, it appeared highly probable that much of the difficult breathing, and the enlargement of the right ventricle, were owing to the remarkable disease which it presented. The new channel obviously, when distended with blood, must have lessened by its pressure the calibre of the old vessel, while, at the same time, the outlet which it possessed into the left iliac was too small to allow of a compensating freedom of circulation through it, so that there must have resulted an obstacle to the transmission of blood through the left side of the heart, and consequently, through the lungs and right side.

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36. *Some new considerations on the Effusion of Blood, and the Formation of Sanguineous Tumours after Wounds of Blood-vessels; and on the mode of Formation of Arterial and Venous Cicatrices.*—In a memoir on this subject, read before the French Academy of Sciences on the 6th and 20th February last, M. Amussat maintained:—

1. That the bloody tumours consequent upon the opening of a vessel by a small wound in the skin, present a tendency of extreme importance in practical surgery, viz: that they constantly have a central canal.

2. That this central canal, which may be compared to a chimney, or to the crater of a volcano, ought to be called the conducting passage, (*trajet conducteur*,) because it is the surest guide to the wound in the vessel.

3. That there exists a perfect analogy on this point, between the observations made on man and direct experiments on living animals.

4. That the difficulty of finding the wounded vessel, and the serious and sometimes fatal errors which have been committed by the most distinguished surgeons in such circumstances, prove the necessity of studying these tumours upon living animals, so as to learn how to recognize the passage in the wound, and surmount all difficulties.

5. That the best proceeding is to follow the passage to the wound, which is formed in the centre of the super-imposed masses of blood, to the cellular tissue surrounding the wound.

6. That this proceeding gives the triple advantage of finding the wounded vessel, so that it may be tied, or twisted as near the wound as possible, and the disgorgement of the tumour promoted.

7. That arterial hemorrhages are almost always fatal in horses and sheep, but frequently stop spontaneously in man and the dog, which would indicate that the blood of herbivorous is less plastic than that of carnivorous and omnivorous animals.

8. That when death is the consequence of arterial hemorrhage, the venous system remains gorged with blood, which proves that the impulse of the heart is necessary even for the venous circulation.

9. "Lastly," says M. Amussat, "a practical conclusion of great importance results from my experiments, inasmuch as they show that we are often in too great a hurry to operate in cases of arterial wounds, and that we err in not relying more upon the possibility of the formation of a solid arterial cicatrix, by employing methodical compression and generous measures; or, in other words, the formation of an aneurism is not the inevitable consequence of a wound of an artery, as is generally believed."

As regards cicatrices, M. A. concludes:—

I. *Arterial Cicatrices.*

1. The frequency of aneurisms after wounds of arteries in the human subject, had caused surgeons to abandon the hope of obtaining arterial cicatrices; and it had been considered as decided, that arteries could not be repaired by a solid cicatrix.

2. My experiments on living animals, along with some facts observed on the human subject, establish the possibility of obtaining permanent arterial cicatrices. They fully confirm the views of J. L. Petit.

3. Arterial cicatrices are never formed by the immediate union of the lips of the wounded vessel. It is always by the intervention of a clot of fibrine which adheres to the margin of the opening, hardens, becomes organized, and assumes all the characters of, and becomes identified with, the walls of the artery.

4. In practice, sufficient endeavours are not made in wounds of arteries to cause them to cicatrize.

5. In general, there is too great a hurry to operate, from the anxiety to prevent what is erroneously believed to be otherwise inevitable—an aneurism.

6. To obtain solid arterial cicatrices, it is necessary to give appropriate support to the clot, to diminish the impulse of the heart, and to keep the part in as immovable a state as possible; in a word, to use all the means that would be adopted to obtain union in a case of fractured bone.

II. *Venous Cicatrices.*

1. The cicatrices of wounded veins are formed like those of arteries, *i. e.* by a clot of fibrine becoming organized, and effectually closing up the wound.

2. To obtain the cicatrization of an artery or vein, appropriate pressure must be sustained for two or three days after the injury; and for a vein, the longest period is required.—*Lond. and Edin. Month. Journ. Med. Sci.*, Ap. 1843.

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37. *Hare Lip.*—In our No. for July, 1842, p. 188, we gave an abstract of a communication made to the Surgical Society of Ireland, by Dr. Houston, the principal object of which was to recommend early operation for the removal of hare-lip. At a meeting of the same society on the 8th April, 1843, Dr. Houston communicated an account of another case tending to confirm the views previously advocated.

The subject of this third case is a male infant, eight weeks old, admitted into the city of Dublin Hospital, Dec. 7, 1842.—"The upper lip is deeply fissured; the fissures running into the nostrils, and the lateral pieces being nearly equal. The hard palate is cleft from front to back, and the lower margin of the septum nasi hangs loose in the cleft. A bony tubercle stands forwards from the septum, so prominent as to project beyond the nose, and holding two teeth, which already, by their size, threaten to cut the gums. A central piece of lip, corresponding to this tubercle, grows from the lower part of the tip of the nose, and is of considerable thickness and breadth. The soft palate is altogether wanting. In the act of crying the entire cavities of the mouth, nose, and fauces, are thrown open. The child is incapable of sucking, and the only milk it receives is that poured

by the mother from her breast into its mouth. It is extremely puny and pale, and is evidently suffering from inanition. It weighs only twelve pounds.

[Here Dr. Houston exhibited a picture of these deformities.]

December 8.—The operation was performed by Dr. Houston, assisted by Professors Benson, Hargrave, Williams, and Mr. Orr. As the first step, the central tubercle of the bone was cut off with strong scissors. Considerable hemorrhage took place from the exposed surface. One pulsatile artery, in particular, lying in a soft tissue between the mucous membrane and the bone at the lower part of the projection, shot out blood with a forcible jet. Ruspini's stiptic, with exposure for ten minutes, failing to arrest the bleeding, the nitrate of silver was applied with immediate success.

The edges of the fissure in the lip were then, in succession, raised from the bone with a scalpel, and excised with scissors from near the corners of the mouth fully into the nose. Two long needles with the hare-lip suture brought the bleeding surfaces accurately into apposition. On the instant of tightening the ligatures difficulty of breathing, amounting almost to suffocation, came on, produced by the suddenness and almost complete closure of the nostrils, and the overlapping of the loose lower lip on the tightened and diminished upper one. On holding down the lower lip relief was instantly procured, but on letting it loose again the same embarrassment ensued. The aperture of the nostrils was so narrowed that no attempt at any improvement in the condition of the central fleshy tubercle could be made; it was therefore left untouched, in order that, if a perfect union of the hare-lip should take place, this tubercle might, by a subsequent operation, be brought down and converted into a septum nasi, by bringing about a union of its point to the centre of the newly formed upper lip. No farther dressings were applied. The mother was instructed regarding the danger of suffocation from the mal-position of the lower lip, and taught how to remedy any embarrassment of breathing that might occur.

Evening.—Much relieved: mouth better opened; breathes more steadily; has taken suck poured repeatedly into its mouth during the day. Its previous habit of being fed with suck in this manner was here found very beneficial.

9th.—Breathing still embarrassed, but always much relieved by holding down the lower lip. Takes suck freely and easily; no vomiting; no inordinate inflammation; sleeps as usual; bowels confined. Injiciatur enema purgans.

10th.—Has passed a good night, and swallowed suck and boiled milk abundantly, and, as the mother says, more effectively than before the closure of the lip by operation. The bowels freed by the enema.

10 o'clock, A. M., (forty-eight hours after the operation.)—The dressings were removed, when the union was found complete and firm in every part—down to the sharp edge of the red border of the lip, and up into the centre of the nostrils. There was not a hair's breadth of failure in the union of the parts brought together with raw surfaces. The line of union was perpendicular, and the flaps lay exactly on the same level. The lower needle dropt out readily, being loosened by suppuration. But its withdrawal threatened ill; for the lip, when deprived of its support, flapped out and in with the breath, in consequence of the absence of gums or other support behind it—a circumstance which suggested the propriety of leaving the other needle still in its place, although sufficiently loose for removal. Nothing could have shown more the firmness of this union, of only forty-eight hours growth, than the fact of its being able of itself thus to withstand the perpetual motion to which it became subjected from the cause above stated. The cheeks were now well drawn forwards by adhesive plaster to avert any dragging in the lateral direction.

An enema was ordered, and directions given to have the milk supplied to the infant in moderate quantities, for fear of bringing on vomiting, by which the new adhesions would likely be torn asunder.

10th (seventy-two hours.)—The union perfect and secure in every part. The upper needle, loosened in hanging half out, was withdrawn, and the same dressings and precautions as before, adopted.

16th.—The union strong and uniform. The health better than before the operation. Regrets were now felt that the upper needle had not been removed at the same time with the lower, as the holes made by it were still unhealed, and appeared larger than those made by the needle removed at the end of forty-eight hours. It was considered advisable to allow the union which had been thus gained to become perfectly secure before attempting any thing farther, and therefore the mother was permitted to remove the child from hospital, with directions to return with it in a few weeks.

January 26, 1843.—The infant was brought back, increased two pounds in weight, in excellent health, and with the union strong and free from all traces of inflammation.

The second operation—that of converting the prominent fleshy tubercle, which hung from the tip of the nose, into a septum narium,—was now proceeded with. This movable piece being of a length to touch by its point the upper margin of the newly constituted lip, the object in the present operation was to effect a union between these two parts, and also, if possible, to join the posterior surface of the former to the remains of the septum, from which in the first instance the osseous tubercles had been cut away. To accomplish these objects, the surfaces designed for contact and union—viz., the lower end of the fleshy tubercle, and the centre of the upper lip, the back part of the same tubercle, and the anterior part of the bony septum, were all pared and made raw. The tubercle and lip were then brought together by a single stitch, and a pin was driven through the centre of the tubercle back into the osseous septum. The fleshy piece, when so placed down, lay like a lid on the opening, covering it completely over. The only thing remaining to be done was the paring of its edges, so as to fine it down, and make a passage on each side for nostrils. But, as an additional violence of this nature would be likely to cause a degree of inflammatory excitement incompatible with the kind and amount of union sought for, it was deemed prudent to defer this modelling process until these objects has been first secured. A light compress kept on by a slip of adhesive plaster constituted the only dressing. On the second morning, the suture which held the tubercle to the lip was removed; and, on the third, the pin which fixed it to the osseous septum was pulled out, both having at these dates been found loosened by suppuration. In undertaking this part of the operation it was to be feared that the pressure of the ligature on the recently formed bond of union in the upper lip, through which it became necessary to pass it, might cause ulceration there; or, that the irritation produced by the pin might prove fatal to union; but in both particulars the apprehensions turned out to have been groundless, for the union in the upper lip remained uninjured; and all the parts became united, to the full amount contemplated, with very little inflammatory, and no feverish, disturbance.

Permission was a second time given to the parents of the child to remove it from hospital until the effects of the recent operations had fully subsided; and on the 6th of March following it was again brought back, when the fleshy tubercle, now firmly united in the mesian line between the tip of the nose and the centre of the upper lip, was trimmed into the shape of an ordinary septum nasi by slicing off its sides with a scalpel. In a few days the incision thus made healed over, and the infant, scarcely now recognisable as the same individual, continued to improve rapidly. The appearance of the child, of which Dr. H. exhibited a portrait, is now even handsome. The upper lip, although necessarily somewhat thin and flat from the great amount of original defect, and from the quantity of substance removed in order to get rid of the rounded angles, is perfect as a whole, and straight along the lower edge.

The vertical line of union in the upper lip, as well as that marking the point of junction between the septum and lip, are scarcely perceptible. The septum is straight, and of the ordinary thickness, the nose itself is good, and the nostrils, open and well formed: the *tout ensemble* making really a comely face. Since the operation a diminution has been gradually taking place in the width f the palatine fissure, so remarkable that the mother herself has noticed it. She

says, that whereas formerly this fissure was so open, as to admit the end of the finger, its margins have now become so approximated as nearly to touch in the mesian line.

Dr. Houston then proceeded to make some observations on the case. He considered that it gave a full corroboration of the views which he had advanced in his communication of last session to the society regarding the time of life most suitable for the safe and efficient performance of the operation--the mode of operating—the advantage of the employment of scissors in preference to the scalpel, and the efficiency of the long woollen needles in closing the wound in the lip. He considered no stronger evidence could be given of the resiliency of an infant under operation, and the strength of its reparative powers than was exhibited in this case, in which, notwithstanding its puny condition, the infant bore up against three operations within thirteen weeks, before it had reached an age of six months, and these not only with perfect success and without any untoward symptoms, but actually with an improving state of health during the whole period. The age which he considered best for undertaking the hare-lip operation was about the third month, and the results of this complicated and unfavourable case, together with others already published, gave him much confidence in adhering to such an opinion. The danger of failure is the only argument against the general adoption of this plan, and such results as the foregoing ars well calculated to diminish apprehensions on this head. The time for the removal of the needles is a matter for which no general rule can be laid down. Dr. Houston stated that in the cases reported by him formerly they had been left in the lip, in one child of two years and a half, for seventy-two hours; and, in one of three months, for sixty hours. In the present instance he found the union complete, and able to dispense with their support in forty-eight hours. Sixty hours he supposed might, therefore, be taken as the average period for leaving them in. Beyond that time there is danger of festering of the needle-holes.

Respecting the treatment of the central fleshy tubercle, it will be observed that it differed in this instance from that of a somewhat similar tubercle in the case of Mary Fox, already published in the proceedings of this society. (See this Journal for July 1842, p. 188.) The difference arose from the position of the attachment of the tubercle. In the former instance it grew from the root of the nose on a line with the upper lip; in the latter, its connection was with the tip of the nose. In the former it was brought down to make part of, and to complete the lip, and was taken in upon the needle introduced for that purpose, the whole operation being completed at one sitting; in the latter the tubercle was reserved for a different object—that of making from it a partition between the nostrils, and a second, and even a third operation became necessary for that purpose. The central tubercle in the latter instance might, equally as in the former, have been pulled down and united in the space which lay between the two pieces of the lip; but to have done so would have flattened the nose on the face, and closed up the aperture of the nostrils. The propriety of the difference in the treatment to which these two apparently similar pieces of loose flesh were subjected, has been satisfactorily proved by the results.

Dr. *Houston* said that, if it were not for the danger to life supposed to attend on early operation, there would be no question at all as to the propriety of removing the defect at the earliest age possible; and the object of his communications on this subject has been to show, not so much that a more effectual removal of the deformity and of the inconveniencies attendant on it follows early operation, for that was admitted on all hands, as to demonstrate that such dangers were overrated. He had never seen convulsions follow the operation; and he knew of no other evil consequences to which the infant was liable at that age, to which it was not equally subject when a year or two older. He could not be persuaded but that a fair and legitimate argument in favour of early operation for simple cases was to be drawn from successes in the worst and most complicated forms, when operated on at the same comparative periods of life, such as that presented in the case before the society, and others which had been

already published. Besides, several instances of successful operation on simple hare-lip, at ages, varying from a few days up to as many months, had actually been recorded since the attention of the profession had been drawn to the subject.

Professor Williams observed that if the early operation was certain to succeed, and was exempt from danger, it should of course always be performed; but these were the very questions that had to be determined. The general tendency of practitioners at present was, and has been for a long time back, not to operate at a very early period of life, because they thought the operation was then more likely to fail and also more dangerous; convulsions, for example, it was agreed might follow the early operation. The great success which attends the operation at one or two years could not surely be an argument in favour of its performance at the age of one or two months; such an argument, on the contrary, if applied to all, cut the other way. It was said that as the aggravated cases in which the early operation was imperative, always succeeded, *a fortiori*, the early operation must always succeed in the simpler. But the early operation did not always succeed in those aggravated cases: Professor Williams had several times (he distinctly recollected three cases) seen it fail in the very best hands. Professor Williams said he must again repeat that he did not intend or wish to argue for or against the early operation in ordinary cases. On the contrary, he thought it one of those questions that was fairly open to examination; he merely wished to convey that it was a question that could not be settled without having the results of a considerable number of cases; and two points had to be determined—the relative chances of obtaining union, and what was more important, the relative chances of danger from convulsions, &c. He also had attempted to show that such cases, as the one mentioned this evening, must be operated on early whatever may turn out to be the fact with respect to the simpler cases.—*Dub. Med. Press*, April 19, 1843.

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38. *Penetrating Wound of the Abdomen—recovery.*—Mr. Wm. Hutchinson relates in the *Dub. Med. Press*, (July 19, 1843,) a case of wound of the abdomen, which is remarkable for its severity and the quick recovery of the patient.

The subject was a woman ætat. 35, who "slipped from the top of a ditch, and the stump of a thorn tree, recently cut, penetrated into the abdomen, making a wound, extending from the crest of the right ilium, to the pubis, nearly parallel to Poupart's ligament. The opening in the peritoneum extended to the sheath of the recti muscles. Her cries brought some people to her aid, who *lifted* her off the stump, when the intestines protruded and covered the abdomen, as I was told by the Rev. Joseph Morton of Elphin, who was visiting through the parish, and with his well known humanity crossed several fields to see what was the cause of distress, and found her in the state described, lying on the ground in great agony. He sent immediately for assistance to Elphin, but knowing the danger of leaving the bowels unreduced, he courageously set about their reduction, and succeeded after an effort of an hour's duration. The doctor (O'Beirne, I believe) brought adhesive plaster, which he judiciously applied, and also a bandage. She was then removed to her house, and in the evening was brought to the infirmary (about five miles.) There was no hemorrhage; her countenance pale and exceedingly anxious; pulse scarcely perceptible; skin covered with a cold clammy perspiration, and shivering like a person a long time immersed in a cold bath. She was placed in warm blankets, warm bottles applied to her feet, and ordered small draught of mist. camph. and sp. ammon. aromatic, and a pill of opium, gr. ss. with two of calomel, and directions to summon me, if necessary. I left her scarcely expecting to see her alive next morning.

19th.—Pulse had become firm and not more than 90; countenance the same as yesterday; slight tenderness all over right side of abdomen. Although I saw no urgent necessity for venesection, I bled her from the arm to xij. oz., and gave her calomel with opium in small doses every three hours, and this, with the occasional use of the house enema, was the only treatment employed. The mouth became sore the third day. There being no tendency to protrusion of

the bowels, I thought it time enough to employ sutures when wanted, contenting myself with the adhesive plaster. The wound healed like any extensive one of the soft parts, without farther trouble. She was the mother of four children, the last being only three months old, she continued on the breast the whole time she was in hospital, and was discharged cured the 12th of May.

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39. *Nail of the great toe growing into the flesh.* By A. Colles, M. D.—In this disease we observe, at the angle of junction between the anterior and external edges of the nail, an ulcerated fungus, into which this angle, as also a portion of the outer edge of the nail, are more or less sunken. The colour of the fungus is rather florid, its surface is smooth: the discharge is purulent, in small quantity and tolerably healthy, unless the part have been irritated by too much exercise of the limb or by some external application or local injury; there is little or no surrounding inflammation, no enlargement of the toe, and the pain is in general trifling, unless during exercise, when the weight of the body on the limb causes the nail to press into the soft substance of the fungus, which thus often induces considerable uneasiness and lameness.

This disease does not appear to me to have any tendency to spread to, or to involve the adjoining parts, as I have seen cases in which it has remained stationary for some months, and in one for two years, at the end of which period the symptoms were in no way more severe than at the commencement, although most writers assert that it generally passes into malignant onychia. The origin of this troublesome affection is usually attributed to the effects of a tight boot or shoe, or to some accident in cutting or breaking off the end of the nail. In many instances, however, no cause can be recollected or assigned for its occurrence.

The unaided powers of the constitution do not appear capable of curing this disease; hence various methods of treatment have been employed by different surgeons: such, for example, as (according to Desault) introducing a small plate of tin under the edge of the depressed nail, and insinuating it between the latter and the fungus, with the two-fold intention of compressing the fungus and of elevating and everting the edge of the nail, so as to make the latter completely overlap the former. This plan of treatment has not stood the test of experience, and Desault himself admits that it is very tedious, and often very painful for several days; that the fungus does not entirely disappear before two months, and that even after this, the metal plate must be occasionally worn to guard against a relapse.

Caustics of different sorts have been employed by others, and Mr. Wardrop, in his paper in the 5th vol. of the Medico-Chirurgical Transactions, particularly recommends the argentum nitratum. I have employed this remedy myself, and have seen it also used by others, but I regret to say, not with that degree of success which Mr. Wardrop's recommendation would lead us to expect. I have, however, found some benefit from this application. Under it, the fungus has become reduced in size, also less irritable, but these improvements have continued only for a few days, after which the parts returned to their former condition.

Sir Astley Cooper, in his lectures, and Dupuytren, in his Leçons Orales, recommend an operation for the cure of this disease, the directions for performing which are essentially the same by each of these distinguished surgeons, viz:—pass one blade of a scissors beneath the nail, from its anterior edge up to the root, then cut through the entire length of the nail, next seize the outer segment with a strong forceps, and by means of these tear it off the toe.

This operation inflicts a great degree of suffering, because in this disease the nail is not, as in onychia, separated from the muscular and highly sensitive matrix, except only through a small extent of space, not more in any direction than a quarter of an inch at its external angle; and, therefore, the scissors pushed upwards between the nail and the adherent matrix, and the forcible evulsion of the former by the forceps, must cause exquisite pain, which though of short duration, can be regarded as nothing short of actual torture. A similar operation

is also recommended by Mr. Liston, in his recently published work on surgery. Notwithstanding these authorities in favour of this plan of treatment, I am by no means an advocate for this peculiarly painful and distressing operation, but on the contrary, I believe we may be relieved from the necessity of performing it, and that we can in all instances effect a permanent cure by a very simple operation, and one comparatively free from suffering; namely, by confining the excision of the nail to so much only as is already detached from the matrix. All of this portion, as well as that imbedded in the fungus, must be removed.

To effect this I proceed as follows:—While an assistant with a spatula presses down the fungus, I seize with a forceps (with strong flat blades, like those of the torsion forceps) the edge of that portion of the nail which is to be removed. I then pass a probe with a thin flat extremity beneath the nail, close to the fungus, as high as it can go, taking care to direct it towards the outer edge of the nail; this enables me to judge how far the nail is detached. I then take a strong crooked scissors of a large size, with one sharp-pointed blade: this I introduce beneath the nail as far as the probe has directed me. With one stroke of the scissors I then cut off all this detached portion of the nail, while by means of the forceps I draw it away with moderate force. Should this attempt fail to remove it, I then re-examine the part with the probe, and again introduce the scissors as high as they can be pushed. A second cut will then complete the separation, and admit of the easy removal of this part of the nail. This second attempt is sometimes attended with a sharp momentary pain, as the point of the scissors often enters a short distance into the sensitive matrix. The portion of detached nail presents no change of texture whatsoever; but a few drops of blood follow this operation. The only dressing required is a small bit of dry lint, which is to be pressed firmly with the probe between the fungus and the edge of the nail. In a few hours the toe is free from pain, and the patient can walk without any lameness or uneasiness in three or four days after the operation. The dressing continues perfectly dry, and needs not be changed until the fourth day. At this time the fungus will be found much reduced in size, perfectly dry, and of a firmer consistence. A small bit of lint is to be reapplied as before; it should not, however, be pressed down so firmly as at the first dressing. In the course of ten or fifteen days the fungus will have entirely disappeared, and the parts be restored to a healthy state. I have never found it necessary to apply the olive-shaped cautery to destroy the fungus, as described by Dupuytren. In the course of this treatment I also advise the patient (in compliance with the rules laid down by authors) to scrape the upper and outer surface of the nail with a sharp pen-knife, or with a bit of glass—an instruction, however, which the patient neglects as soon as he feels himself relieved from pain.

It affords me much gratification to be enabled to state, that in no instance have I met with a case of relapse, after this operation has been efficiently performed. But the result of the operation itself is not in all cases so successful as I have hitherto represented; for in some instances, four or five days after the operation, the patient will complain of some uneasiness in the toe, when we shall find on examination that the dressing is moistened with a little discharge, and that a small portion of a whitish substance, like soft and swollen leather, is rising up through the fungus. This substance may be regarded as a sort of accessory ungual filament, arising close to the original nail from the anterior and outer border of its matrix, and which is now altered in texture and direction. This filament is so soft that it breaks and tears if caught by the common dissecting forceps. In order, therefore, to remove it, (which it is necessary to do,) we must seize it with the torsion forceps, and excise it with one cut of the scissors, passed well and fully beneath it. The lint dressing is to be reapplied in the manner before mentioned, and the case will proceed without further interruption to a perfect cure.

Before I dismiss this subject of "the nail growing into the flesh," I may add, that I have seen many cases of this disease remaining unchanged for months, and even for a year and upwards; and I have never yet met with an instance

in which the ulceration has extended so as to induce that more severe disease of "onychia maligna," although some writers of high reputation have described this latter as an increase or extension of the former.

There is another morbid affection, which occasionally engages the anterior and inner angle of the great toe nail, and which causes considerable lameness and uneasiness, particularly on pressure. This affection is often mistaken for an attack of gout, particularly in those persons where such an attack may be expected, or even desired. In this disease there is no swelling or redness; but pain, on pressure, at the anterior and internal angle of the nail. On a close examination of this spot, we find that this angle rests on a hard, white mass of laminated, horny cuticle, which we can easily remove in bran-like scales, when we shall see a small cup-like cavity, without any ulceration or disease. The ungual angle appears thick and bulbous opposite this point, and the pain is caused by its pressing against this mass. This affection is easily cured by scraping away all this substance, and excising the bulbous angle of the nail, and then interposing a little lint. Attention is required, for some little time, to remove any unhealthy growth of the cuticle or nail, and to secure the patient from any further uneasiness. Finally, I may remark, I have never seen this disease engage the outer angle, neither have I seen that last described engage the inner angle of the toe nail.—*Dublin Medical Journal.*

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40. *Onychia Maligna of Great Toe.* By A. Colles, M.D.—This painful disease is often the result of some local injury, such as a heavy weight falling upon or rolling over this part. It occasionally occurs without any assignable cause. In some instances, the nail is found very much altered from the healthy state, being of a dirty brown or black colour, and adhering to its matrix in detached spots only, while it is separated from it both at the root and to a considerable extent of its under surface. In other cases it has been altogether thrown off, and a foul ulcer occupies its site. This ulcer presents jagged edges, and unhealthy surface, with an ichorous discharge, and extends along the toe above or beyond the matrix of the nail. Both phalanges are swollen, so that the circumference of the toe is increased by at least a quarter of an inch, the last phalanx presenting a very peculiar bulbous shape. When the original nail has been cast off, we usually see projecting from the sides and tarsal border of the ulcer a narrow plate of a white substance, not unlike white leather soaked in water; this sometimes forms one continuous shelf all round the ulcerated border, projecting in a peculiar prominent manner, that is, rather at an angle to, instead of being on a plane parallel to the dorsal surface of the phalanx. In some cases, this white substance (which is the result of an abortive attempt to produce a true nail) appears only in detached spots or flakes, the intermediate parts of the ulcerated margin being devoid of any such growths. They are most frequently seen at the posterior and anterior angles of the nail, but occasionally in other parts of the circumference. The surrounding integument is discoloured, being often of a livid or purplish tint; it is also indurated, and exudes a copious perspiration of a peculiar heavy odour. This ulceration sometimes induces caries of the bone, and even extends to the phalangeal articulation.

All modern authors concur in the opinion, that onychia depends upon a morbid condition of the secreting matrix of the nail, and that it can be cured only by removing, by excision, this diseased organized structure; and no writer, that I can recollect, encourages the idea of a permanent improvement being possibly effected by any other local treatment. I admit that the operation of the complete removal of the entire of this diseased matrix does effect the cure in a very short space of time, provided the bone or joint is not diseased, (in which case amputation is inevitable,) and that, subsequently, rest and simple dressing will alone accomplish the healing process, the place of the nail being supplied by a dense hard skin. But still this operation is not without objection. It is always attended with severe pain, and which sometimes continues for many hours. It also too frequently happens that the disease returns in some one spot or other, owing to the matrix not having been wholly eradicated, which indeed it is often

extremely difficult to do; for the shape of the toe is so bulbous and so deformed, the textures so changed and so condensed by chronic inflammation, and the edges of the ulcer are so raised over the part to be removed, that even an anatomist cannot easily recognise the relations of the several tissues involved in the disease, or ascertain the exact extent of the substance to be excised. During the operation also, the flow of blood is so profuse as to prevent the operator distinguishing one texture from another; accordingly, it occasionally happens, that the patient, having enjoyed an immunity from pain for some days after the operation, becomes alarmed by feeling a slight return of his former uneasiness on any exercise of the limb, or on any pressure on some particular spot, generally on one of the angles of the original ulcer: and the surgeon, on a careful examination of this spot, finds there is still a little ulceration, and a fresh production of that ungual growth, already described as abnormal both in texture and in direction, and which indicates the persistence of some of the diseased matrix. This will again act as a foreign body, exciting constant irritation, and will soon lead to a renewal of all his former sufferings, and for the removal of which the excision of this morbid tissue must be repeated. Any surgeon who has experienced this disappointment can, I am confident, bear testimony to the horror with which the patient has contemplated, and the reluctance with which he has submitted to a repetition of this peculiarly painful operation. I have known it necessary to repeat this even a third time; and therefore, whenever the secondary operations become necessary, I should remind the surgeon that to insure success he must cut much more deeply and extensively than he might at first suppose to be necessary.

Notwithstanding these objections to this operation of excising the diseased matrix, I yet admit, that when it is properly performed, it will be followed by a speedy and a perfect cure. However, I am of the opinion, founded on some experience, that this disease may be cured without resorting to such a painful measure, by external applications alone, which are unattended with pain, and which, in a few days, will induce a considerable amendment, and even a perfect cure in the course of three or four weeks. The plan of treatment, which I have pursued for some years, and, as yet, with invariable success, is as follows:—I confine the patient to bed, and direct a poultice to the toe for two or three days. I then cleanse the ulcer carefully by directing on it, from some height, a small stream of tepid water from a sponge. I next cut away as much of the loose nail as I can, without paining or irritating the sensitive surface around, and then I fumigate the part by means of the mercurial candle, containing ʒi. of the hydr. sulphuretum rubrum (olim cinnabar) to two ounces of wax.* This fumigation is to be applied night and morning, and, after each, the toe should be gently enveloped in lint or linen, lightly spread with ung. spermaceti. In four or five days, the patient will express himself as considerably relieved; the discharge from the ulcer will be found of a healthy, purulent character, and the appearance of the whole part much more favourable. The fumigation is still to be persevered in, and all projecting portions of nail to be closely cut. I consider this latter direction as very essential, as thereby the mercurial fumes can have more free access to the surface of the ulcer. In proportion as the ulcer improves, it is interesting to observe, so does the condition of the growing nail; it acquires not only its natural firm and horny consistence, but also assumes its proper horizontal direction. For some time after the general surface of the ulcer has been healed, there still remain small spots of ulceration, generally at the angles, around some white germs of new nail. Against these points, the full force of the mercurial vapour should be directed. This can be effected by adding a small conical ivory tube to the funnel. I attribute much of the success of this treatment to the use of the mercurial candle, in preference to fumigation in the ordinary mode. I must observe, that during this course of treatment the patient must absolutely abstain from walking, or even standing on the affected limb; exercise but for a single day will counterbalance all the amendment produced

* See Colles's Practical Observations on the Venereal Disease, p. 58.

by a week's rest and fumigation. In the cases which I have thus treated, I have had no recourse to any constitutional treatment, or to any peculiar regimen. No doubt, cases must occur in which there will be derangement of the general health, and which will require suitable constitutional remedies before we can expect to cure the local disease by mere local applications. I make no doubt that this ulceration may sometimes arise from, or be so intimately connected with some constitutional derangement, as to be incurable without the aid of constitutional treatment. Mr. Wardrop, in his paper above alluded to, has recommended a cautious and judicious use of mercury, and has recorded some instances of its success.

The uniform success which has attended this plan of treating onychia by mercurial fumigation, during the last few years I have adopted it, leads me to hope that the surgical operation I have already alluded to may in future be dispensed with; but even should more extended experience prove that I have been too sanguine as to this expectation, yet I feel persuaded that this practice cannot be injurious, and that it will never fail to improve the condition of the ulcer, and of the surrounding parts, reducing the enlargement and removing the deformity of the toe; so that, even should the operation be ultimately necessary, the surgeon will be better enabled to ascertain the exact situation and extent of the disease, and thus, by a single operation, to remove the whole of the matrix so effectually as to secure his patient from any relapse: therefore, the time which has been occupied in the fumigating process cannot be considered as lost or misapplied.—*Ibid.*

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41. *Incontinence of Urine cured by Vermifuges.*—M. Perrier relates a case of this character in a lad seven years of age. Not finding any cause for the disease, M. P. suspected that it resulted from worms, and prescribed a vermifuge which brought away thirty large lumbrici, and the boy was at once cured of his incontinence of urine.—*La Lancette Française*, May 27, 1843.

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42. *Ovarian Tumours.*—The No. of the *L. & E. Monthly Journ. Med. Sci.* for June last, contains an interesting paper by Alexander Kilgour, M. D., one of the Physicians to the Aberdeen Infirmary, the object of which is to furnish some hints for a diagnosis, in doubtful cases of encysted dropsy of the ovaries, and the solid tumours attended with ascites. Whilst the distinguishing this ascites from encysted dropsy, especially when the latter is attended with some cysts containing a gelatinous or semi-solid matter, is difficult, it is at the same time, he remarks, in a practical point of view, of great importance, in so far as, whilst the general rule in practice, not to interfere with any encysted dropsy, unless in cases of extreme urgency, ought to be absolute in those cases where there is a mixture of cysts of gelatinous or semi-solid matter with cysts of fluid, the fluid of ascites, depending upon enlargement of the ovary, may be removed repeatedly with comparatively little danger, or may be kept under by the judicious use of medicines.

The non-malignant solid enlargement or tumour of the ovary, and which sometime attains a very great size, is, generally speaking, of the same character as the fibrous tumour of the uterus, and unless improperly interfered with, may exist for many years, without giving more disturbance than is occasioned by its bulk. The malignant disease is similar to that met with in the mamma, and sometimes is of the hard form; in other cases it presents the characters of soft scirrhus, or encephaloid disease. The non-malignant disease is not attended with pain, the malignant one is so generally, but not always. The latter is almost invariably attended with much constitutional disturbance; it is much more rapid in its course; and, whilst it indicates almost its nature by this quickness in its fatal pace, it frequently still further demonstrates itself by attacking the mammæ, the uterus, or the pylorus.

The fibrous and the scirrhous tumours, when felt through the abdominal wall, are smooth or rough, or knobbed or tuberose, on the surface; and no diagnosis of the two diseases can be made by this means; but the semi-solid or gelatinous

cyst is almost always smooth, and invariably, to a practised hand, gives more a feeling of elasticity than solidity, whilst traces of fluid, perhaps faint, will be discovered in partial spots of the abdomen, viz., in some of the other cysts.

The semi-solid or gelatiniform and elastic cyst is always fixed, but the solid tumour is often movable, and, when attended with effusion, it moves about by slight pressure in the fluid.

After relating three cases of non-malignant and scirrhous tumours, Dr. Kilgour inquires "are there any accurate means of distinguishing solid ovarian disease with ascites, from encysted dropsy of the ovarium? But, first, how is encysted dropsy itself known from ascites? Cruveilhier, in his early and small pathological manual, says,—"On n'a pas toujours de signes positifs pour distinguer l'hydropisie ascite de l'enkystée, lorsmême qu'apres la ponction on a été témoin des progrès de la maladie." But, in his later and more splendid work, he has got new light on this point, and putting the question,—"by what signs can we establish a diagnostic betwixt these two diseases, a diagnostic not only interesting theoretically and as a perfecting of science, but in a practical view," he proceeds to furnish us with two: "1st, In ascites the liquid always occupies the most dependant parts, viz., the pelvis and lumbar region; whilst the small intestines, floating in the fluid, correspond to the umbilical region, according to the observation of Frank; and the arch of the colon and the stomach occupy the epigastrium. Percussion, therefore, with the fingers on the abdomen, or, better still, the ivory plate of Piorry, elicits a dull sound over the hypogastric and lumbar regions, changing somewhat its character, according as, in different positions of the body, the fluid is made to change its place, but a clear one in the umbilical and epigastric regions; whereas, in encysted dropsy, the cyst developes itself anteriorly to the intestines which it pushes back; so that, in no possible case, and in no degree, can the tympanitic sound exist. This observation belongs to M. Rostan. Add to this, that the fluctuation is more decided in ascites than in encysted ovarian dropsy; that, according to the researches of M. Piorry, the sound over the cyst is much more dull, and that by means of percussion, mediate or immediate, the percussion may be carried to the point of distinguishing, in cases of complication, what belongs to the cyst, from what belongs to the ascites. 2d, In ascites we find the neck of the uterus in its proper place; in encysted ovarian dropsy the uterus is not forced downwards, as is generally said, but, on the contrary, is drawn upwards, so that it is impossible to reach it; whilst, also, in this latter case, the pelvic cavity is filled by a portion of the abdominal tumour. In addition to these positive signs, it may be stated, that encysted dropsy often exists with a good state of general health, whereas the reverse is the case in ascites; and that the latter has generally anasarca of the lower extremities along with it, whilst the former has not." (V^e^. Liv., pl. iii. p. 3.)

Such are the pathognomonic signs according to Cruveilhier; and without yielding the exclusive merit of the first to Rostan, it must be granted it is one which will very seldom fail. There is just one case, and only one, where it may mislead, and that is, where chronic disease of the peritoneal coat of the intestines has been followed by matting together of these, and adhesion to the posterior part of the abdomen, in which case they do not float on the surface of the fluid, so often effused ultimately in such cases. In regard also to the distinctness of the fluctuation in the two diseases, the observer will find that in ascites the fluctuation is distinct from one lumbar region to the other, whereas it is not felt in ovarian dropsy at this part, more especially when the patient stands erect, but otherwise, in many cases of the encysted dropsy, the fluctuation is fully as distinct as in ascites. In those cases of complication of encysted ovarian dropsy with ascites, to which it is presumed the researches of Piorry refer, it is not so much by percussion, as by manipulation, that the diagnosis is made out; for by pushing our fingers through, as it were, the fluid of ascites—and which in these cases exists only in a moderately thin layer anteriorly—we can distinguish the more confined fluid of the cyst. And, amongst the positive signs, Cruveilhier has omitted one of no little value—the form of the swelling (to ascertain which,

accurately, it is necessary to observe the abdomen of the patient both recumbent and erect), for in most cases of the single large cyst, (and that is almost the only case where any difficulty exists), a peculiarly rounded appearance anteriorly may be observed, and a practised eye will also detect more or less of a sulcus between the swelling and epigastric region. The position of the uterus is not to be relied on; but the good state of the general health, and the absence of anasarca are worth observing, for in ovarian disease the latter seldom occurs. In the most extensive disease of that kind I ever witnessed, where the abdomen, measuring seven feet in circumference, reached almost to the ground, and where, from the elevation, at the same time, of the chest, and in which the neck had almost disappeared, the figure of the poor woman was like that of a tortoise laid on its back; there was no anasarca of the legs.

But there is another sign which is only furnished by paracentesis—the character, physical and chemical, of the fluid drawn off. In most cases of encysted ovarian dropsy the fluid is thicker than serum, flowing through the canula of the consistence of train oil, of a greenish or dark colour, and of a saponaceous feel. Sometimes it is grumous, like drained honey, or like jelly; or it assumes these characters as the sac becomes emptied. Nitric acid added to it produces a thick coagulum, and so also does boiling. When these characters are present there can be no doubt as to the nature of the dropsy. But have we never a fluid exactly similar to that of ascites in the unilocular or single cysted ovarian dropsy? It would be held as heterodox to affirm that we have not; and the induction that those numerous cases which we find on record of successive tappings of what were believed to be cysts, were in reality collections in the peritoneal cavity, would be held decided heresy; but, nevertheless, the proofs that such clear serum was from a cyst, are by no means so numerous as the assertions to that effect. Of the case of that famous Dame Mary Page, who thought it necessary to have recorded on her tombstone, that "In 67 months she had been tapped 66 times, and had taken away 240 gallons of water without ever repining at her loss or fearing the operation," we may reasonably entertain a doubt, seeing that her classical and accomplished medical attendant, Dr. Mead, was only of *opinion* it was ovarian.* Dr. Barlow gives a case in the *Transactions of the Provincial Medical and Surgical Association*, vol. iv. p. 399, in which, at five different tappings, "a pale straw-coloured serum, such as is usual in ascites, " was drawn off, and which, at the sixth operation, was found to be purulent. It was ascertained by dissection that there was one large cyst. In Mr. Ford's case, (*Med. Communications*, vol. ii.) where the patient was tapped 41 times, the fluid was also ascertained to have been secreted from one cyst, but the character of the fluid is not given. It will be found that in almost every encysted dropsy, the fluid, if clear at the first operation, and like that of ascites, becomes, after a few repetitions of the operation, purulent or thick. The chemical characters of morbid fluids in the human body do not as yet seem to have much engaged the attention of the profession. According to Dr. Marcet, there are 33 parts in the 1000 of solid matter in the fluid of ascites, and 80 in the 1000 of that of hydrocele, a difference which it is difficult to account for; but these must not be taken as absolute, for I have the notes of a case of ascites which occurred in the ward of my colleague Dr. Dyce, where no albumen could be detected in the fluid by the usual tests. There is little doubt, it will be found, that the fluid of encysted dropsy is always much more loaded with albumen than that of ascites, and this may be made a means of diagnosis of the two diseases.

How, then, are we to distinguish solid ovarian tumour with ascites, from encysted dropsy? It is not simply because we can feel a solid tumour in the seat of one or both ovaries, and fluid in the belly, that we are to conclude the fluid is in the peritoneal sac; for we very frequently find in the multilocular ovarian disease, that some of the cysts are filled of semi-solid or fungoid substance, whilst the others are filled of fluid. There is a sign, which was very observable in both of the cases already given, and which may serve the purpose

* "In ipsis ovorum conceptaculis, quæ recentiores medici *ovaria* appellant, primum collectas fuisse opinor." Monita, p. 150.

—the *mobility* of the tumour, for it moves up and down in the fluid, striking the finger exactly like the child in utero, in what is termed the *ballotement*. In consequence, also, of its moving through the fluid, it presents different parts of its surface to the hand of the examiner, and he is led thereby to the idea, that there are several tumours—an error which is only corrected by examination after the fluid has been drawn off. In the encysted dropsy, the solid tumour, if there be any present, is fixed; it is often attached to the adjacent parts; but, whether this be so or not, it is *outside* the cyst or bag of water, or forms part of the *wall of the cyst*, and, in either case, it cannot move in the fluid. Of course this sign is only available when the peritoneum is fully distended with serum. In addition, we have in such a case, the tympanitic sound of the abdomen, and the broad belly, with bulging out flanks; but we must not expect these to be so decided as in ascites from other causes, for there will be dulness over the immediate seat of the tumours, and their presence will also give somewhat of a prominence to the abdomen.

The following case may be given, as an example of a diagnosis of a case of unilocular dropsy, made up from the presence or absence of certain of the preceding signs.

Case 4. Margaret Langland, aged 58, was admitted into Dr. Dyce's ward, with the view of being tapped for what had been believed to be ascites. The belly was much and uniformly distended, and the fluctuation was very distinct. No tumour or hardness could be felt in any part. She stated, that before the appearance of the swelling, which began about twelve months before, she had pain in the right side, and in the region of the liver. Her health was rather impaired. Nevertheless, from the absence of any tympanitic sound on percussion anteriorly, and from the flanks not being distended when she lay on her back, the case was held to be ovarian; and the discharge of a thick, soapy, green-coloured fluid, and that followed by a grumous fluid, confirmed this view. She sank in three days after the operation.

Examination of the body discovered a large cyst lying between the intestines and the anterior wall of the abdomen, to which it adhered. It was connected with the right ovary. The Fallopian tube and its fimbriated end were very distinct, and about nine inches in length; whilst in the usual situation of the ovary, there was a mass of the size and thickness of the hand, composed of cysts of the size of large nuts, the mass forming part of the wall of the large cyst. The wall of the abdomen where the cyst adhered, was so thin, that when the operation was performed, the lancet used in making the cut through the integuments, went into the sac. It was evident it would have soon burst externally. It is unnecessary to detail the morbid appearances which were the result of the inflammation that caused death.

In concluding this paper, the following table will probably be held as correcting a remark in Boivin and Duges, to this effect:—"The disease (ovarian) is seated first on one side,—generally, it is said, on the left," (p. 466;) for it will not be regarded as merely accidental, that in 25 cases which I have seen and examined, 18 should have commenced in the right side, and that only 4 should belong to the left ovary, according to the woman's statement, or examination after death. Perhaps some one will examine the numerous cases on record of this disease, and confirm, or refute, by the aid of numbers, this opinion, founded on so limited an observation as 25 cases; unless the observation of Cruveilhier, —"quant à la circonstance du développement du kyste sur l'un des côtés de l'abdomen, qui est generalement indiquée dans les auteurs, elle est illusoire, elle est purement théorique,"—be a damper to such an investigation. But this remark of the learned Professor is altogether at variance with experience, for, in most cases, the woman is aware of the swelling having commenced in one side, though the most careful manipulation by the medical attendant will not, in many instances, enable him to say which ovary is the seat of the disease.

In the table, I have not entered the cases in the order of time in which I saw them, as in my note-book, but I have put those that were tapped first, to show the result, and the malignant and non-malignant solid tumours last, to exhibit the difference in their fatal progress.

TABLE.

Name.	Age.	Single or Married.	Number of Children.	Ovary first affected.	Disease first observed.	Condition of Swelling.	Number of Tappings.	Character of fluid.	Remarks.
Eliza Henry.	30	S.	None.	Right.	1 year.	Elastic, large, fluctuation very distinct.	1	Thick.	Died from operation.
Mrs. Knowles.	36	M.	One.	Left.	3 months.	One cyst, first observed after parturition.	1	Ditto.	Alive, disease recurred
Margaret Bain.	29	M.	None.	Unknown.	5 years.	Fluctuation, partly gelatinous.	1	Ditto.	Died from operation.
Janet Cook.	43	M.	Several	Left.	6 months.	Ditto ditto.	1	Ditto.	Ditto.
Mrs. ——.	29	M.	Two.	Right.	9 months.	Ditto ditto.	3	Ditto.	Died.
Margaret Langland.	58	S.	None.	Ditto.	12 months.	Fluctuation very distinct, no solid tumour.	1	Ditto.	Died from operation.
Mrs. Ellis.	33	M.	Nine.	Ditto.	2 months.	Ascites, solid tumours, (malignant.)	7	Serum.	Dead.
Mary Nicol.	26	S.	One.	Ditto.	3 years.	Ditto ditto (non-malignant.)	43	Ditto.	Alive.
Margaret Gray.	37	M.	None.	Ditto.	7 months.	Solid, smooth, slight ascites.	. .	. .	Not known.
Mary Hector.	28	S.	Ditto.	Left.	1½ years.	Firm, elastic, smooth, no fluctuation.	. .	. .	Alive.
Mrs. Wright.	49	M.	Twelve	Right.	Ditto.	Cysts size of orange, soft, fluctuating.	. .	. .	Not known.
Catharine M'Donald.	29	S.	None.	Unknown.	3 years.	Large, firm, fluctuation, (health very good.)	. .	. .	Alive.
Mrs. Mathieson.	50	M.	Ditto.	Right.	3 years.	One part firm and elastic, in others fluctu-	. .	. .	Died from erysipelas.
Ann Cumming.	40	M.	Ditto.	Ditto.	4 months.	One cyst, no hardness. [ation.	. .	. .	Not known.
Jean Fraser.	19	S.	Ditto.	Both.	. .	Several small cysts found only on dissection	. .	. .	Died by suicide.
Barbara Joss.	. .	M.	Several	Right.	. .	Firm, elastic, large.	. .	. .	Not known.
Margaret Knowles.	38	S.	None.	Ditto.	6 months.	Solid, hard, movable, painful, (malignant.)	. .	. .	Died.
Widow Knowles.	82	M.	Several	Ditto.	1 year.	Solid, irregular, movable, painful.	. .	. .	Ditto.
Judy Carley.	48	S.	None.	Ditto.	4 months.	Solid, irregular, very painful, (malignant.)	. .	. .	Ditto.
Isabel Bruce.	50	S.	Ditto.	Ditto.	5 years.	Solid, very large, no fluctuation.	. .	. .	Alive.
Mrs. ——.	38	M.	Ditto.	Ditto.	9 years.	Ditto, smooth, large, ditto.	. .	. .	Ditto.
Mrs. ——.	36	M.	. .	Ditto.	3 years.	Ditto, irregular, no pain, ditto.	. .	. .	Ditto.
Mrs. Cumming.	36	M.	One.	Ditto.	5 years.	Ditto ditto ditto ditto.	. .	. .	Ditto.
Mrs. ——.	66	M.	None.	Left.	22 years.	Ditto, smooth, ditto ditto.	. .	. .	Ditto.
Widow Ingram.	74	M.	Ditto.	Right.	25 years.	Ditto ditto ditto ditto.	. .	. .	Died from dysentery.

43. *Large Calculus voided by Urethra.*—Mr. Cook relates in the *Lancet* (June 3, 1843) a case in which a calculus of an oval shape, one inch long, one inch and a half in circumference at its largest part, and weighing forty grains and a half, was passed through the urethra of a man.

OPHTHALMOLOGY.

44. *Capsular Cataract from injury—Absorption of the Capsule.* By John Walker, Esq., Asst. Surgeon to the Eye Hospital, Manchester.—Mrs. H., a married female, about thirty years of age, had lost the vision of her left eye in consequence of a blow received nine years before. A white pearly opacity was seen to block up the pupil, which latter contracted and dilated with the utmost regularity. No change was observable in the condition of the iris or any other texture of the eye, and she could readily discern a light or any other shining object. The case appeared to be one of capsulo-lenticular cataract, and on the 22d of October last, at her request, I performed the posterior operation for solution, but, on endeavouring to break up the lens, I found that there was nothing but opaque capsule, which was very tough and parchment-like, the lens having evidently undergone absorption soon after the receipt of the injury before mentioned. I attempted to divide the capsule into fragments, in which I partially succeeded, and then pushed the entire body out of the axis of vision, into which, however, it very speedily returned. The moistened extract of belladonna was then applied over the orbit, and the usual antiphlogistic treatment enjoined.

The case went on favourably for the first ten days, but little inflammation having resulted, and, there being an aperture in the capsule, she had now regained some power of vision. At the expiration of this term, however, she began to complain of severe pain in the eye, and, on visiting her, I found that a rather sharp attack of inflammation had come on, and I was also surprised to find that the entire of the opaque capsule had come forward into the anterior chamber, lying irregularly across and nearly filling it, and that the pupil had contracted upon it. My first impression was that I ought to puncture the cornea and evacuate the irritating body, but the patient was exceedingly averse to any further operation, and had been very restless and unmanageable at the first, so that I decided on waiting to see if the opaque body would be acted upon by the aqueous humour and removed by the absorbents. I accordingly contented myself with the employment of leeches, blisters, and the ordinary remedies, with a view of diminishing the inflammatory action as much as possible in the mean time. These, however, did not seem of much avail, and the pupil remained closely contracted, notwithstanding the continued use of the belladonna, until a considerable portion of the capsule had disappeared, when the inflammatory symptoms gradually subsided and the pupil expanded. It was about two months from the time of the capsule passing into the anterior chamber before it had become entirely absorbed, and I carefully observed its gradual disappearance under the action of the absorbents. I may here observe that no mercurial preparation was given at any time during the progress of the case. The inflammatory action has now entirely subsided, leaving the pupil slightly contracted, but clear, and possessing the power of contraction and expansion under the varying influence of light. There is no other morbid change visible, except a slight central opacity of the cornea, the consequence of the inflammatory action having extended to that texture, and she is now regaining her vision. Here, then, was an instance in which the removal of a large portion, if not the whole, of the opaque capsule was indisputably removed by the process of absorption—a fact, the possibility of which has been disputed by most writers on ophthalmic surgery.—*Prov. Med. Journ.*, Feb. 18, 1843.

45. *Black Cataract.* By M. Magne.—A female, above sixty years of age, had laboured under some affection of the eyes, for which she had consulted a great

number of oculists. She was quite blind; the eyeballs were prominent; the sclerotica appeared to be thin; the iris well shaped, but perfectly immovable; bottom of the pupil dark, as in the healthy state.

From these and other symptoms the disease was supposed to be amaurosis; but a second examination of the patient was made in a darkened chamber, and with the aid of a candle, as recommended by M. Sanson. The deep-seated images were absent, and M. Magne accordingly declared the case to be one of black cataract, with adhesion of the iris. The diagnosis having been confirmed by M. Cruveilhier, the lens on the right side was depressed, on the 25th of March, 1843. The adhesions of the iris were numerous; but as soon as the capsule was lacerated, the dark colour of the lens became evident, and, on depressing it, several black fragments were detached.

On the second day after the operation the pupil appeared to be less contracted, the base being quite dark, but on the following day it was closed by a white substance. M. Cruveilhier regarded this as the lens, which had come forwards, after having lost its dark colour in the vitreous humour. The operation was unsuccessful, and was, therefore, repeated in a fortnight; but the first touch of the needle showed that the body supposed to be the lens was, in reality, the capsule, which was extremely soft and elastic. A few shreds were removed with much difficulty, and the patient recovered but a very imperfect power of vision.—*Prov. Med. Journ.*, Feb. 18, 1843.

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46. *Horny excrescences on the Eyelids.*—Dr. F. A. Ammon has twice observed horny growths on the eyelids. The cases were as follows:—A stocking-maker, forty years old, healthy and strong, had a horny growth, three lines large, on the right upper eyelid, a few lines from its ciliary margin. It had grown gradually, and turned downwards. The patient believed that it came from a wart; and he came to Dr. A. only because he had lately often struck the growth, and given himself pain. Dr. A. cut it off with scissors, going rather deep into the healthy skin, and the wound bled considerably for some time. When it had ceased bleeding it was touched with nitrate of silver, and in twelve days it was completely healed. Two years have elapsed, and the disease has not reappeared.

The most accurate examination detected nothing more than that the horn was a dark cartilage-like substance, uniform from its apex, and consisting of several close lamellæ. Where it was connected with the skin, there was seen an intermediate substance like a thickened cutaneous gland.

In the second case, Dr. A. observed the disease in a woman fifty years old, who had ceased menstruating for some time, and had had warts on many parts of her body successively, which, however, were always removed by the remedies she applied. From a wart on the left upper eyelid, a horny excrescence had gradually formed, which was upwards of four lines high, inclined to one side, and smaller at its apex than at its base. It gave no pain, but it often itched, and when the woman scratched it, it bled. Dr. A. extirpated it with scissors, and it has not been reproduced.

As far as Dr. A. knows, among the cases of horny excrescences described by authors, there is none of a *cornu cutaneum* of the eyelids.—*F. A. Ammon's Monatsschrift*, July 1840.

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47. *Amaurosis caused by Distress of Mind and cured by Fright.*—A very remarkable case of this character has been recorded by M. Arnal in the *Gazette des Hôpitaux*, June 16, 1842. The subject of it was a man, at present 36 years of age, who had been myopic since childhood. This near-sightedness he stated had come on after gazing for a considerable time at the bright sun. From this period he experienced no other inconvenience except momentary cerebral congestion, until two years ago, when having learned suddenly the loss of his whole fortune, he became deeply distressed, his sight was affected, and he became quite blind. After some hours he perceived numerous sparks and flashes of light before his eyes, and he had violent headache; but these symptoms soon ceased, and the patient remained perfectly blind.

Antiphlogistics and revulsives were tried without benefit. The unfortunate patient, deprived at once of sight and fortune, and not receiving relief from the best surgical advice in Paris, had recourse to charlatans, and among others to the homœopaths who promised him a speedy cure, but failed after many months' treatment to perform their promises.

The patient finally had became resigned to his hard fate, when one day his child, four years of age, had a violent fall. The unfortunate father who was near him, and heard him fall, called to him, but received no answer. Groping about for the child, he found him on the pavement without respiration, pulseless, and apparently lifeless. The father called loudly for help, and when assistance came he was so overcome that he fainted. He remained in this situation for about twenty minutes, and great was his surprise on reviving to find that he was no longer blind. Objects indeed appeared as if enveloped in a thick mist, but he saw them, it was no illusion, for his sight gradually became clearer, and in a short time he was able to pursue his ordinary occupations.

His right eye, however, remained feeble, at times he saw flashes and sparks of different colours, rendering the sight of that eye imperfect, when a new misfortune led to the complete recovery of his sight. He was attacked with double pneumonia, accompanied with typhoid symptoms. The disease was protracted and painful; nevertheless it was cured by antiphlogistics, tartar emetic, revulsives, &c.; and finally, when convalescence was established, he had the satisfaction of finding that his sight was as perfect as at any period of his life.

MIDWIFERY.

48. *Remarks on Forceps Cases.* By Robert Lee, M. D.,—"In more than twenty cases of protracted labour, where it had been proposed to deliver with the forceps, the histories of which it would be tedious to relate, I recommended delay, and they all terminated favourably without artificial assistance.

"Five of the mothers whose cases have now been related, died from puerperal convulsions, and four from the rash and inconsiderate use of the forceps. Seven had the perinæum more or less injured, one the recto-vaginal septum torn, five were left with cicatrices of the vagina after sloughing, and one with an incurable vesico-vaginal fistula. In none did any benefit result from the instrument before the greater part of the head of the child had passed through the brim of the pelvis, and the orifice of the uterus was fully dilated. In one case only was the employment of the forceps advantageous, where the blades were applied and locked with great difficulty, and great force required to extract the head of the child. Seventeen of the children were born alive and lived.

"In protracted labours, when the head has made no sensible advance for hours, and becomes compressed, the scalp puffy and swollen, the vagina dry, hot, and tender, the discharges offensive, and when the bladder cannot be emptied without the catheter, it is dangerous to trust longer to the natural efforts. If along with these symptoms, there is tenderness of the abdomen, fever, incoherence, restlessness, and exhaustion, delaying long to deliver is invariably followed by the most injurious consequences, as the cases related in the next report sufficiently prove."—*Clinical Midwifery.*

49. *Presentation of the Arm in nine consecutive labours in the same woman.*—M Gery relates an example of this in the *Révue Medicale* for Nov. 1842.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

50. *Is the Urinary secretion suppressed in acute and subacute poisoning by Arsenic?*.—According to the experiments of Orfila, it is not, whilst Flandin and

Danger came to an opposite result. In order to determine this important question, Delafond, Professor of Pathology and Legal Medicine at the Veterinary School of Alfort, performed several experiments, which he detailed in a memoir before the Royal Academy of Medicine, and the result of which are thus given by Ollivier, (D'Angers), Chevallier and Le Canu, Commissioners to examine the memoir.

M. Delafond commenced, by ascertaining the urine secreted in a given time by horses and dogs, in a healthy state, after being deprived of food and drink during forty-eight hours. The bladders in each were first artificially evacuated, and then again at the expiration of forty-eight hours. The quantity of urine obtained from horses at the latter period, was 5 litres 664 millitres, or 118 millitres in one hour; and of dogs, 1 litre 152 millitres in forty-eight hours, or 024 millitres in an hour.

Preparatory to the second series of experiments, M. Delafond took it for granted that the following facts had been already established by the observations of Bouley and Orfila. 1. That sixty grammes (two ounces) of arsenic, in powder, introduced into the stomach of a horse would cause its death in a space of time not less than forty-six hours, nor greater than one hundred and forty-four hours. 2. That arsenic in powder introduced into the stomach of a dog, whose œsophagus is tied immediately after, to the amount of 20 or 30 centigrammes, will destroy the animal in from fourteen to twenty-seven hours; and that death will happen much more quickly if the poison be introduced in a state of solution.

Recollecting also, that arsenic is most commonly taken in a partly dissolved state, and partly suspended in various aliments or drinks, he administered it as follows. To horses, a dose of 30 grammes, mixed in three litres of water, in order to induce acute poisoning; and a dose of 60 grammes in six litres of water, to induce the subacute condition, while to dogs, he gave 5 grammes with water. The bladder of each of these animals were evacuated immediately previous to the exhibition of the poison. They also had not been allowed any drink for twenty hours before this time.

Six horses experimented upon, died in one hour, one and a half hours, eight hours, twenty-one, twenty-nine, and fifty-one hours; and the urine obtained, varied from three litres to two centilitres. The dogs died at a mean period of twelve hours, and the quantity of urine secreted during that time, varied from three centilitres to one decilitre. In both, the urine contained a notable portion of arsenic, and which began to be deposited as soon as the constitutional symptoms of the absorption of the arsenic became manifest.

The author infers from these results, that the urinary secretion is not suppressed during acute poisoning from arsenic. There is equally no doubt, but that it is notably diminished. If the figures 100 be taken to represent the quantity secreted in the healthy state, the present amount will be 29 in the poisoned horse, and 17 in the poisoned dog. M. Delafond repeated some of these experiments before the commissioners. To a horse who had fasted fifty hours, and whose bladder had been thoroughly emptied, 40 grammes of arsenic in five litres of water were injected into the stomach by means of a tube introduced into the œsophagus. The tube was then withdrawn and the œsophagus tied. In four hours, the animal was dead, without having urinated. The bladder contained four decilitres of urine, decidedly arsenical.

The same experiment was repeated on a horse that had fasted sixty hours. It died in two hours and twenty minutes, and the bladder contained only two decilitres of urine equally arsenical. The diminution here appears to correspond to the shorter life of the animal.

To a bitch, who had been denied food and drink for fifteen hours, and whose bladder was perfectly emptied, five grammes of arsenic in a litre of water, were injected into the stomach, and the œsophagus was tied. Death ensued in three hours and a few minutes. The mucous membrane of the bladder was of an intense red, and it contained a decilitre and a half of yellowish red urine, in which arsenic was readily detected. In another dog, death ensued an hour and a half after taking 2½ grammes of arsenic suspended in half a litre of water. The bladder contained two decilitres of arsenical urine.

The experiments also enabled the commissioners to verify a curious observation of M. Delafond, viz., the almost instantaneous production of false membranes, sometimes so compact, that they may be removed in one piece, formed like a hollow cylinder, from the internal surface of the small intestines in horses poisoned by arsenic. This membranous concretion always occurs in less than two hours, and what is remarkable, according to M. Delafond, neither corrosive sublimate, tartar emetic, nitrate of silver, muriate of antimony, or sulphate of copper produce any thing resembling it.

It is evident from the facts ascertained by M. Delafond, that the secretion of urine continues, although in a less degree than in health; and it must also be recollected, that the previous state of fasting is unfavourable to it.—*Bulletin de l'Académie Royale de Médecine*, vol. 8, p. 810. T. R. B.

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51. *Death from eating Phosphorus.*—The following account is taken from a newspaper published at the city of Rochester, in this state, June 1843. The infant daughter of Mr. Newman ate some phosphorus on Friday, at 12 o'clock. The mother immediately gave it an emetic, after which it remained easy. It is, however, stated, that the smoke of the phosphorus escaped freely from the bowels during Saturday. It continued apparently well until Sunday morning, when it was seized with terrific pains, which continued until she died, at 6 P. M.

On dissection, extensive burns were discovered throughout the whole course of the intestines. It is added, that the proper antidotes were freely given. A more detailed account of this case would be acceptable. T. R. B.

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52. *Death from Lucifer Matches.*—Emma M'Adam, a child three and a half years old, poisoned herself by sucking the ends of some French Congreve matches. It was stated at the inquest, that they were composed of oxymuriate of potash and phosphorus.—*London Atlas Newspaper*, June 20, 1840.

A girl aged six months, at Lancaster, sucked the end of some lucifer matches. About eight hours after, violent sickness came on, which continued a night and a day; the matter vomited was luminous, and as well as the breath, emitted a strong phosphorescent odour. After the cessation of the sickness, the child lay in a drowsy, comatose state, until within a few hours of its death, when it was seized with violent convulsions and died in one of the paroxysms. This occurred on the fifth day. Its bowels during the whole time had been sluggish, requiring enemas constantly in order to cause evacuations.

On dissection, twelve hours after death, a large injected patch was found near the pyloric orifice, and the mucous membrane was thickened and softened. The duodenum and jejunum were healthy, but along the whole course of the ileum, there were several oblong patches of thickened, softened, and in many places ulcerated mucous membrane. The colon and rectum were healthy; the liver pale and somewhat indurated; the lungs and pleura healthy. Mr. Lafarque in *Provincial Medical Journal*, quoted in *Lond. & Edin. Monthly Journ. Med. Sci.*, April 1843. T. R. B.

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53. *Poisoning by Binoxalate of Potash.*—In the number of this journal for July 1841. a case is given in which the patient recovered from its effects. In the present instance, the result was fatal. A lady recently confined, was ordered one ounce of the bitartrate of potash, but the apothecary sent by mistake the same quantity of the binoxalate, divided into two doses. One dose was immediately swallowed, but had scarcely reached the stomach, when she was seized with excruciating pains, followed by violent convulsions, and death ensued within ten minutes after the swallowing of the draught.

On opening the body, twenty-four hours after death, putrefaction was found to have commenced on all the lower parts of the abdomen. The mouth, pharynx, and œsophagus were in their natural state. The orifices of the stomach were hermetically closed, in consequence of the contraction of the circular fibres which surround them. The mucous membrane of the stomach, duodenum and

small intestines, all presented the appearance of violent inflammation. The blood was fluid in the heart and great blood-vessels.

In another case, a female wishing to wean her child, took for three successive mornings the remedy prescribed. It consisted, as was afterwards ascertained, of oxalate of potash, and each day's prescription held one drachm and sixteen grains of the salt. It induced violent vomiting after every dose, bloody and blackish, with extreme pain. Death ensued within an hour after taking it on the third day. The matters vomited were examined, and found to contain a large proportion of salt of sorrel, as forty grains of oxalic acid were extracted from them.

On the other hand, a female swallowed an ounce of the binoxalate, at a single dose, dissolved in water. She experienced serious symptoms only at the end of an hour and a half, and the case was successfully treated by giving first a mixture of chalk and afterwards antispasmodics.—*Edin. Med. & Surg. Journ.*, Oct. 1842. *Annales D'Hygiene. Lond. & Edin. Monthly. Journ. Med. Sci.*, Oct. 1842.

It is asked by one of these journalists, why this remarkable difference in the last case? We need more details to form a decided opinion, but it may be conjectured that the puerperal state aided materially in hastening the absorption of the poison. This opinion is strengthened by the fact of forty grains of sulphate of potash given as a purgative to a female recently confined, causing death in two and a half hours, after extreme suffering. Dr. Bayard was required to make a chemical analysis of the substances contained in the stomach, but could detect nothing beyond the salt in question.—*Annales D'Hygiene*, April 1842. T. R. B.

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54. *Poisoning by a Cerate prepared from Wax Candles that contained Arsenic.* By Dr. Errard.—An individual convalescent from pneumonia, had two blisters applied, one to each arm. The wounds were dressed with ointment. Dr. Errard was sent for on the next day; he found the arms painful, the tongue red, dry, and cracked, and the pulse small, irregular and frequent. There was urgent thirst, pains in the abdomen, without purging, and involuntary contractions of the muscles of the lower extremities and of the back, with headache. Death ensued in the evening. Dr. E. suspected poisoning, but as the relatives assured him that nothing hurtful had been taken, no further examination was made.

Eight days after, a blister was applied to the thigh of a young woman, for headache arising from suppressed menstruation. It was afterwards dressed with cerate, which caused such pain, that the dressing was removed. Dr. Errard on visiting her, found that she had intolerable thirst, with nausea and pain in the stomach. The tongue was red, the wound was inflamed and a little bloody, and there were twitches in the limbs. She recovered with proper remedies after a few days.

Dr. Errard now recollected that a cerate applied to the nose of a child, some short time previous, had aggravated the inflammation, and on inquiry, he ascertained, that in all the three cases, the cerate had been obtained from the same shop, and that it was made from the ends of wax candles. No chemical examination was had, but it is well known, that in every village, the ends of candles used for lighting churches are frequently thus employed, and further, that they are made from lard whitened and hardened by arsenious acid.—*Gaz. Med. de Paris.* T. R. B.

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55. *On the Composition of Pure and Vitiated Atmospheres.* By R. D. Thomson, M. D., Glasgow. (Proceedings of the Glasgow Philosophical Society.)

Dumas has lately published some experiments made at Copenhagen, on air taken from the surface of the ocean. Its constituents were found to be the same as those already obtained from every kind and description of place, under ordinary circumstances.

The trials of Leblanc (see American Journal of Medical Sciences, New Series, Vol. 5, p. 495) on vitiated atmosphere, are of great interest. The quantity of carbonic acid in the atmosphere in its pure state has been shown by the Saussures to vary from three to six parts in 10,000. But Leblanc found that the air

in one of the wards of the hospital, "La Pitie," which contained fifty-four patients, afforded five times more of carbonic acid than in healthy air. So also in one of the dormitories of the Salpetriere, it reached to nearly fourteen times more. In Dumas' class room, after a lecture of an hour and a half, where nine hundred persons were present, the carbonic acid amounted to one per cent., and the same quantity of oxygen had disappeared. From other experiments, he considers this the maximum quantity for safety, and strongly recommends a better ventilation, when so much carbonic acid is present. This result agrees with experiments made in Great Britain. When the atmosphere is deteriorated by burning charcoal, he has seen death produced, when three per cent. of carbonic acid was present in the atmosphere. In all such cases of death from stoves, he has found carbonic oxide in the air, and he attributes a deleterious effect to the agency of this gas. He has observed one per cent. of this gas to destroy an animal in two minutes, which is contrary to the statement of M. Nysten. This observation explains many of the inconsistencies which appeared some years ago in the evidence of some London chemists, respecting the influence of Joyce's stoves. It is quite obvious that their structure was dangerous. Leblanc found that a candle was extinguished in air containing four and a half, or six per cent. of carbonic acid. In such an atmosphere, life may be kept up for some time, but respiration is oppressive, and the animal is affected with very great uneasiness. Air expired from the lungs contains about four per cent. of carbonic acid, thence this atmosphere is noxious, Even three per cent. in the atmosphere killed birds, and yet we have seen statements which affirmed that upwards of three per cent. had been detected in the London theatres. All these facts are pregnant with importance in reference to health. Our miners may not be suffocated by fire damp explosions, but we should remember that their constitutions may be poisoned by the respiration of tainted atmospheres.—*Lancet*, February 4, 1843.

T. R. B.

56. *Death from violence to the testicles.*—It appears that among a certain class of people of Germany, in resorting to blows, it is customary to endeavour to grasp and squeeze these organs, and prize-fighters are accordingly accustomed to cover and protect these organs. A few years ago, at or near Peitz, a young man who had interposed between two combatants, was observed to fall to the ground, uttering a loud cry, and after having been seized with violent convulsions, in a few minutes, died. Every attempt to restore animation failed, and the cause of death remained in obscurity, until the next day, when on dissection, the scrotum and penis were seen strongly injected and much swollen, and on opening the abdomen, about four ounces of blood were found behind the peritoneum, upon the psoas muscle of either side, at the place where the spermatic cord passes through the abdominal ring, and the vas deferens leaves the spermatic vessels. At this point, the spermatic artery and vein were, if not torn, at least so distended and attenuated, that their coats appeared quite porous and cribriform, and had evidently given egress to the blood, which was discovered extravasated.—*Lancet*, March 11, 1843.

T. R. B.

57. *Test for Nitric Acid.*—(Berzelius' Annual Report.) M. Berthemiot has discovered an easy method of determining the presence of nitric acid. About a drachm of concentrated sulphuric acid, free from nitric acid, is to be placed in a glass, and to this is added a few drops of the liquid suspected to contain nitric acid. These are mixed together with a glass rod, and then with the moist extremity of the rod, a small piece of brucine is introduced into the mixture, and the whole stirred together; if nitric acid be present, a red colour will be immediately developed, which will afterwards pass to yellow: if there be no nitric acid, the brucine will not dissolve. By this means, the presence of the one ten-thousandth part of nitric acid may be detected in a liquid.—*Pharmaceutical Transactions*, March 1843.

T. R. B.

58. *Rupture of the Gall-bladder by blows.*—Dr. Fletcher recently submitted

to the Pathological Society of Birmingham, a ruptured gall-bladder, taken from a patient, who after fighting, had been suddenly taken ill and peritonitis supervening, had died the second day. Mr. Hodgson attributed the rupture to the unhealthy state of the bladder, and said that in a similar case, a judicial inquiry was stopped, on its being found by experiment, that the gall-bladder of sheep would not burst when struck with great force by a butcher's cleaver, as they lay on a block attached to the liver and intestines. In both cases of ruptured gall-bladders, the deceased (we should mention) showed no marks of external violence in any part of the region of the gall-bladder.—*Medical Times.*

T. R. B.

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59. *Fresenius' Method of distinguishing between Arsenical and Antimonial Stains obtained by Marsh's Apparatus.*—(Wohler & Liebig's Anal der Chemie, for September 1842.)

Obtain marks as distinct as possible, in the usual way by the apparatus, and continue (changing occasionally the tubes) as long as spots are given. Then remove the vessel in which the gas is generated and substitute an apparatus for the generation of sulphuretted hydrogen. Pass a stream of this gas over the metallic spots, so slowly that the gas will just burn as it issues from the end of the tube, which is drawn out to a fine orifice.

When the gas is coming over, heat the tube by a spirit lamp, beginning at the outer end of the apparatus and passing the lamp slowly along in a direction contrary to the direction of the current of gas. The metal or metals present are thus converted into sulphurets. When this conversion is perfect, remove the sulph. hydrogen apparatus and replace it by one for the generation of hydrochloric acid gas, interposing a larger tube, filled with cotton, between this apparatus and the tube in which the spots are contained. Let the stream of this gas pass slowly along the tube, and the *sulphuret of antimony*, if any be present, will be dissolved instantaneously, if the spots be thin; and in a few seconds, if they be thicker—for this substance is very volatile in an atmosphere of hydrochloric acid.

On the other hand, the *sulphuret of arsenic*, if any be present, will be unaffected, and after all the antimony is removed, may be obtained by sealing the end of the tube, and filling it with aqua ammoniæ, by which it will be dissolved and can then be subjected to subsequent tests.—*Journal of the Franklin Institute*, 3d series, vol. 5, p. 420. T. R. B.

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60. *Poisoning by Laurel Water.*—A female infant about eight months old, and who had experienced but little illness, was suffering from dentition, united with some intestinal disorder. The physician in attendance prescribed evacuants. The next day, finding irritation in the abdomen, he ordered three leeches to be applied, and prescribed a potion of which black cherry water was the principal constituent. The druggist to whom it was taken was not at home, and the shop boy not being able to find the bottle of black cherry water, thought he might substitute cherry laurel water. The child had scarcely taken half a teaspoonful of the mixture, than it shrieked, and threw her head back, and was convulsed. Death ensued in ten minutes after taking the mixture.

The poison was detected by its odour, and on examining the body, the brain and spinal marrow were found in a healthy state, but the mucous membrane of the stomach was injected towards the greater curvature. The duodenum was also high coloured, but the rest of the alimentary canal was in a healthy state. The fluid found in the stomach contained no trace of prussic acid, but that remaining in the phial had so large a quantity, that a rabbit and a puppy were each destroyed by a portion of it in a few minutes.—*Encyclographie des Sciences Médicale*, September 1842.—*London Medical Gazette.* T. R. B.

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61. *Antidotes to Bromine.*—From certain experiments on animals, Dr. Glover has been induced to recommend starch in solution, and the whites of eggs. Mr. Alfred Smee has still later proposed ammonia, as an invaluable and effectual

antidote. Bromine (he observes) is one of the most deadly poisons with which we are acquainted. It lowers the circulation with great rapidity, and makes the action of the heart irregular, and unfortunately from its volatile nature, cannot well be used without considerable escape. Its hurtful action is instantly counteracted by the vapour of ammonia, for when the two meet, dense white fumes are produced, when bromine probably ceases to exert its baneful influence, or at any rate to a much less extent. I have known persons nearly poisoned by incautiously using this substance, and who have been quite at a loss to know how to proceed to neutralize its action. Those who have to deal with bromine, would do well to have an open vessel of the liquor ammonia by their side, which is in general quite sufficient to prevent any unpleasant consequences.—*London Medical Gazette*, April 1843. T. R. B.

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62. *On the antidote to Corrosive Sublimate proposed by M. Mialhes.* By M. Orfila (Journal de Chimie Médicale).—I was anxious to ascertain the value of this substance, and accordingly prepared 100 grammes of the protosulphuret of iron, by decomposing protosulphate of iron with sulphuret of ammonia. The resulting mixture was put into a ground stoppered bottle which I kept filled with water, as the contact of the air would convert the protosulphuret into the persulphuret of iron. When the precipitation was completed, I decanted the liquor by means of a syphon into another ground stoppered bottle, and by repeated washings, freed it from every trace of sulphate of iron and sulphuret of ammonia. In this condition it was kept free from any contact of the air.

Experiment 1. The tenth part of the above was given to a middling sized dog, and immediately after 60 centigrammes of corrosive sublimate dissolved in one hundred grammes of water. The œsophagus was tied and kept so for eleven hours. With the exception of a few stools, the animal showed none of the symptoms of poisoning, and he continued well.

Exp. 2. I introduced by means of a gum elastic sound the same quantity of corrosive sublimate into the stomach of a dog, and immediately after injected the same quantity of the protosulphuret as in the last experiment. The œsophagus was kept tied during eleven hours. The animal did not appear incommoded, and the next day was perfectly well.

Exp. 3. The same experiment was repeated with this variation, that the antidote was given *ten minutes* after injecting the poison. The animal died at the end of four hours, with all the symptoms of poisoning, and particularly had numerous stools blackened by the sulphuret. On dissection the stomach was found inflamed and ecchymosed.

I infer from these, 1st, That the protosulphuret of iron is a perfect antidote, if it be *immediately* given in sufficient quantity after the poison has been swallowed. 2d, That it is inefficacious, if the giving of it be delayed from ten to fifteen minutes, as the poison will then have had sufficient time to produce its deleterious effects. 3d, That although I readily concede that it is a far more energetic and complete antidote than albumen, and ought in consequence to be preferred, if *immediately* attained, still it is no less true, that in most cases, we will obtain more advantage from the immediate exhibition of whites of eggs beaten through water, which *are always at hand*, than from delaying, as may frequently be the case, for the preparation of the other antidote.—*Encyclographie des Sciences Médicales*, January 1843. T. R. B.

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63. *A new Docimastic Test.*—"In the chapter on respiration we are told that the air remaining in the lungs consists for the most part of azote with some carbonic acid. A solution of deoxidized indigo on being injected assumed merely a greenish tint: a new *docimastic* test is thus furnished. The residual air is retained with great force in the lung: the whole being expelled only after boiling in water, whereupon a lung that has breathed sinks to the bottom of the vessel. A large amount of air is thus obtained. The specific gravity of the lung which has breathed is about that of ether, therefore it floats in alcohol and oil of turpentine. The lungs can be washed with chlorine water, nay even steeped in it for some

time, without losing their buoyancy."—*Review of Huenefeld on the co-operation of Chemistry and Medicine, in British and Foreign Medical Review*, July 1843.
T. R. B.

64. *Antidotes against the principal Mineral Poisons.*—At a meeting of the Royal Academy of Medicine of Paris, held March 21, 1843, Sandras and Bouchardat read a communication, entitled *Experiments on the Antidotes of corrosive sublimate, lead, copper, and arsenic.* Their conclusions only are quoted.

"We think we have proved that the following substances are antidotes to 1. *Corrosive sublimate*, viz. a mixture of powdered zinc and iron; iron reduced by hydrogen and the persulphuret of the moist hydrated peroxide of iron. 2. *Copper;* a mixture of powdered zinc and iron; iron reduced by hydrogen; *lefer porphyrise;* zinc filings; and the persulphuret of the moist hydrated peroxide of iron. 3. *Lead;* the persulphuret of the moist hydrated peroxide of iron. *Arsenic;* the moist hydrated peroxide of iron; the dry hydrated peroxide of iron and the persulphuret of the moist hydrated peroxide of iron.

As this last named preparation acts equally on all the above poisons, it is above all proper to be administered in cases where the exact nature of the poison is not known."—*Bulletin De l'Academie Royale*, vol. 8, p. 807. T. R. B.

65. *Detection of Arsenic by Copper.* By Hugo Reinsch. (Repertorium fur Pharmacie.)—This method consists in *acidulating the arsenical fluids with muriatic acid and boiling them with metallic copper, which then becomes covered with a steel-gray crust of metallic arsenic.* So complete is the separation of arsenic by this method, that no traces of it can be detected in the residual fluid by means of Marsh's apparatus.

Besides the precious metals, (which are readily distinguished from arsenic, by their brilliancy,) bismuth and antimony are the only ones which are precipitated under similar circumstances, but bismuth is always deposited in the crystalline form, and antimony constantly covers the copper with a violet-coloured metallic pellicle in weak solutions, and a grayish-white one, in those more concentrated.

When acids such as the phosphoric, sulphuric or acetic, containing arsenic, are boiled with metallic copper, the latter preserves its brilliancy unchanged, nor is it affected by an aqueous solution of arsenious acid, but as soon as a few drops of concentrated muriatic acid are allowed to fall on the copper, whilst the fluid is still warm, it is instantly covered with the characteristic steel-gray crust of metallic arsenic. This test is sensible in a fluid which contains one-millionth part of five centigrammes of arsenious acid.

M. Reinsch prepared a mixture of boiled potatoes, milk and soup and introduced gr. 0·025 of arsenic into the mixture. He digested the whole with pure muriatic acid, diluted with an equal weight of water, boiled the liquor, filtered it and treated it with slips of copper; these were immediately covered with the arsenical pellicle, exactly as if the arsenic had been dissolved simply in acidulated water, or the mineral acid. This method hence appears preferable to Marsh's apparatus, as it cannot like the last, give rise to mistake, from the formation of stains derived from organic matters, or from the employment of arseniuretted zinc, or from the troublesome frothing of the liquid. It is easier, and requires less time than Marsh's apparatus, and certainly equals it in sensibility.

All that is necessary for medico-legal purposes, is to digest the contents of the stomach and intestines, with pure diluted muriatic acid, and then the filtered liquor with slips of copper.

If further examination be necessary, let the slip of copper covered as above, be carefully washed with water, in the same vessel in which it has been boiled with the suspected liquid, and then dry it cautiously over the flame of a candle. It is then to be slipped down the centre of a glass tube about sixteen inches long, one end of which terminates in a capillary orifice, whilst to the other is closely adapted a small bent tube, having its lower end furnished with a perforated cork. The part of the tube where the copper lies is then to be heated for

a short time with a spirit lamp, when arsenious acid sublimes along the tube in small but well-formed brilliant crystals. If we wish to test the arsenious acid thus formed, we may cut off the end of the tube, dissolve the acid, and apply the usual fluid tests. Or if we wish to obtain from it metallic arsenic on a porcelain plate, we can adapt by means of the cork, the bent tube to an apparatus for disengaging hydrogen and inflame the gas at the capillary orifice.—(*Translated and condensed from the Journal de Pharmacie.*) T. R. B.

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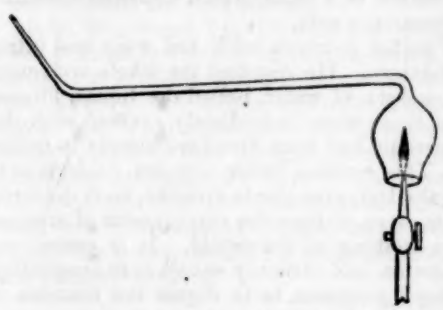
66. *Professor Christison's recent Observations on Legal Medicine.*—(Medico-Chirurgical Society of Edinburgh, January 4, 1843.)

Dr. Christison stated that he had recently succeeded in detecting arsenic in the liver of a person who had died from poisoning with that substance and whose body had been buried for three months. The process followed was that of Orfila and Marsh, with some immaterial modifications.

He further announced that he had detected alcohol in the stomach in two instances, where spirits had been taken not long before death and where a considerable period had elapsed between death and the date of examination. In one instance, the body had been buried about three weeks, in the other no less than three months; and the contents of the stomach had in each case been kept six weeks longer. The process of analysis consisted in cautious distillation from carbonate of potash—neutralization of the distilled fluid with sulphuric acid to remove ammonia; redistillation till a fifth of the fluid passed over, and agitation of the new distilled liquor with dry carbonate of potash. A clear colourless liquor rose to the surface, presenting all the characters of rectified spirit, and amounting in the case of the three months interment, to one fluid drachm of the density of .836. The author concluded with showing that the possibility of detecting alcohol in such circumstances was, so far as he was aware, a new fact in toxicology.

Dr. Christison lastly observed, that on the two occasions just alluded to, he had applied for the detection of arsenic the process lately proposed by Reinsch, and had obtained most satisfactory results. In medico-legal investigations, he considered it superior to every other process, of equal delicacy, greatly superior to every other in point of convenience, where complex fluids or mixtures of organic solids were to be examined, and a process which on the whole was likely to supersede all others hitherto proposed.

Dr. Christison likewise exhibited a simple apparatus which he had devised for collecting and examining the products of the combustion of the gas in Marsh's apparatus. This will best be understood by a reference to the accompanying wood cut. The gas in this tube burns in contact with an abundant supply of atmospheric air, the products being water and arsenious acid. These collect in the tube, at its further extremity, which ought to be kept cool by water dropping on it. The fluid thus obtained can be subjected to the ordinary liquid tests for arsenic. —*Lond. and Edin. Journ. of Med. Sci.* March, 1843. T. R. B.



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67. *Weights now in use with French Apothecaries.*—In my notices of French weights in this and in preceding numbers, except where otherwise stated, I have followed the table given in Johnson's Medico-Chirurgical Review, for October 1840, p. 529. The editor informs us, that since the beginning of 1840, the French government has directed that the old system of weights used by chemists and druggists, and consisting of grains, scruples, drachms and ounces, be abolished and be replaced with a decimal system as follows:

One grain equivalent to 5 centigrammes.
Ten grains, equivalent to 50 centigrammes.
Twenty grains equivalent to 1 gramme.
Thirty grains equivalent to 1 gramme and 50 centigrammes.
Fifty grains equivalent to 2 grammes and 50 centigrammes.
One scruple (24 grains) equivalent to 1 gramme and 30 centigrammes.
One drachm* equivalent to 4 grammes.
Two drachms equivalent to 8 grammes.
Half an ounce equivalent to 15 grammes.
One ounce equivalent to 30 grammes. T. R. B.

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68. *Case of Poisoning by Lead in Maccouba Snuff.* By Professor Otto, of Copenhagen (Zeitschrift fur die Gesammte Medicin).—The following cases have excited universal attention at Copenhagen. M. Dreyer, highly esteemed as a scholar and a botanist, has enjoyed general good health until the autumn of 1841, when he was seized with the common symptoms of dyspepsia, and with costiveness and a muddy complexion. As he led a sedentary life, exercise was advised and bitter and laxative pills were prescribed. After this, he felt a little better, but just before Christmas, was seized wirh uncommonly severe colicky pains. His pulse was natural, tongue clean, and the abdomen not painful on pressure. The bowels had been open on the previous day. Enemas containing a grain of opium gave relief. Even then, the suspicion of lead being the cause, was excited, and Dr. Ahrensen supposed that the red wine prescribed, might contain it, but this was found not to be the case.

The improvement did not long continue, the bowels remained costive, the colicky pains returned with cardialgia. He had four of these attacks during the winter, which were removed, partly by purgatives and partly by opiates. In one of these only, was there quickness and tenseness of the pulse, with tenderness of the abdomen, and for this he was bled, and calomel was added to the opium. During the last attack, a very large quantity of round hard fæces were discharged, and after this the patient felt very well. In a week however, he was attacked with violent headache and this ended in a comatose state. In spite of all remedies used, he died at the end of two days, and about four months after the first attack of colic.

On dissection, every part was found healthy in the abdomen, except a trifling enlargement of the colon, probably caused by the frequent clysters; the brain too was healthy, except a slight injection of the membranes.

The deceased was much lamented, but his death had been almost forgotten, when his friend Dr. Bramsen read in a journal that red Maccouba snuff was sometimes adulterated with red lead. On this, he imagined that his deceased friend, who took a great deal of this snuff, might have been poisoned by it. He therefore bought some at the shop where the deceased used to buy his and found that it was mixed with a number of large and small grains, which looked like minium, and on chemical examination, he discovered that the snuff contained from sixteen to twenty per cent. of lead.

In the case of a young physician still alive, who is a great snuff-taker and long used the same snuff as the deceased patient, there has been an affection of the abdomen, characterized by colicky pains and obstinate costiveness. This has continued for a year, and he has become very thin. As he has now left off taking the snuff, it is to be hoped that he will be cured.—*Lond. Med. Gaz.* April 1843.
T. R. B.

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69. *Infanticide by Suffocation.*—The earth or ashes which is found in the mouth or pharynx of those which have been hid in either, form a paste with the mucosity that adheres to the coats of these cavities, and in this way their further progress to the œsophagus and stomach is stopped. The presence of these

* The drachm is now fixed as equivalent to 80 grains, instead of 72 grains, as formerly. T. R. B.

foreign bodies in the mouth, the pharynx and larynx, is therefore not a positive proof in favour of the child being alive when buried in this way. They may be found whether the infant was alive or dead. But the length and flattening of the œsophagus is such, that the foreign bodies will not enter it, by gravity alone, even if the infant were placed in a vertical posture. Hence the presence of the foreign bodies in question, in the stomach and intestines of a child thus found dead, can have been caused only by an act of deglutition, and consequently it must have reached these while living, and we can form some idea as to the time that it has survived, by the extent of the intestinal canal, through which the foreign bodies have passed.—*Mathyessens in Archives de la Medecine Belge*, April 1843. T. R. B.

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70. *Remarkable Case of Suicide from the presence of a large Iron key in the œsophagus*, by Dr. Robert Jackson, of Leith.—Dr. Jackson was requested to visit Mrs. A., a widow aged 42, lately of irregular habits, who was stated to have swallowed some foreign body with the intention of committing suicide. It appeared that the day previous she had attempted to hang herself. The woman who gave this account was much inebriated, and Dr. Jackson, on seeing Mrs. A. found her calm and collected and positively denying the charge. Nothing in her appearance rendered it probable. She complained however of a slight sore throat, was a little hoarse and had some pain in swallowing, but her breathing was natural. The fauces were slightly inflamed and nothing unusual could be seen in viewing the throat. Dr. Jackson requested her to call the next morning at the dispensary, but he saw nothing of her until the 18th of March, a period of forty-two days, when he was again desired to visit her.

Mrs. A. now informed him that she had never been well since he had seen her; suffering much from difficulty in breathing, cough with expectoration and some pain in swallowing, and she thought she was getting worse. He questioned her most seriously concerning her attempt at suicide; she did not deny the attempt to hang herself, but reiterated again and again that she had never swallowed any substance with that intent, and seemed displeased at his inquiries. The neighbour also, who was now acting as her servant, had withdrawn her belief of such a thing. She was emaciated, pale, with an anxious expression of countenance, considerable dyspnœa, taking long inspirations, which were accompanied with a loud croupy noise, her voice was hoarse and she spoke in a loud whisper. She had considerable cough, with a mucous expectoration. There was considerable difficulty of swallowing, but not much pain except at one small spot, just behind the thyroid cartilage; she contrived however to take her tea as usual and could swallow hard biscuit, for which she had a partiality. She often also took beaf tea, wine, and could swallow pills. She was treated as labouring under some affection of the larynx or trachea, and was bled freely and had blisters applied to the part. She took medicines readily; but continued much in the same state, until the day of her death, on the morning of which, she took her breakfast, consisting of tea, an egg and some hard biscuit. During the day, her breathing became more and more laborious, coma followed, and she died in the afternoon of the 2d of April, *fifty-eight* days after Dr. Jackson had been first called.

On dissection, the parts diseased were immediately exposed. A transverse incision was made above the epiglottis down to the spine. As soon as this was done, Dr. Jackson observed the block of a key in the œsophagus, resting on the anterior wall of that tube, close upon the epiglottis, but a little beneath it. The extremity of the block of the key rested immediately below the hyoid bone on the left side, causing a small patch of ulceration on the mucous membrane of the œsophagus, where it was in contact with it. The pipe or tube of the key lay on the anterior wall of the æsophagus, forming for itself a sort of groove or furrow, which exactly fitted it. About two inches down, was a small deep spot of ulceration, which extended through all the coats of the œsophagus, and went as far as the mucous membrane of the trachea, exposing and laying bare part of the thyroid cartilage. The ring or handle of the key in its descent had caught

hold of a fold of the lining membrane of the gullet, and by pushing this a little way before it, had formed a pouch or sac, which had stopped its further progress. The canal of the œsophagus was continuous posterior to this fold. From the irritation produced by this part of the key, inflammation had set up, and by the effusion of lymph, the walls at this part were greatly thickened and hardened, and the formation of the sac completed and strengthened.

The adjacent parts bore marks of irritation and inflammation; the lungs were very crepitant and contained a large quantity of frothy matter. The pericardium contained about an ounce of bloody serum. The remainder of the organs presented no unhealthy appearance.

The key was a common iron cellar key, of a black colour and very slightly corroded. It measured four inches in length, one inch broad at the wards, and one inch and a half at the handle. It was proved after Mrs. A.'s death, that on the day of its occurrence, a young woman heard her declare with an oath that she had swallowed the cellar key. This key also could not be found, to open the cellar door. And again it was ascertained that she had also attempted suicide, by forcing the poker down her throat.

Dr. Jackson is of opinion, that her death was not occasioned by what is properly called suffocation, neither from dysphagia, or want of nourishment, but rather from irritation to the bronchi and lungs and gradual mal-oxygenation of the blood, from the œdematous state of the larynx and laryngeal opening.—*Condensed from Edin. Med. and Surg. Journ.* July 1843. T. R B.

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71. *Answers returned by the Fifteen Judges to the Questions on the "Plea of Insanity," submitted to them by the House of Lords.*—The answers were read in the name of all the judges, excepting one, (Mr. Justice Maule,) by Lord Chief Justice Tindal, on the 19th June, 1843.

Question I. What is the law respecting alleged crimes committed by persons afflicted with insane delusion, in respect of one or more particular subjects or persons: as for instance, where at the time of the commission of the alleged crime the accused knew he was acting contrary to law, but did the act complained of with the view, under the influence of some insane delusion, of redressing or avenging some supposed grievance or injury, or of producing some supposed public benefit?

Answer. The opinion of the judges was that notwithstanding the party committed a wrong act, while labouring under the idea that he was redressing a supposed grievance or injury, or under the impression of obtaining some public or private benefit, he was liable to punishment.

Quest. II. What are the proper questions to be submitted to the jury, when a person alleged to be afflicted with insane delusion, respecting one or more particular subjects or persons, is charged with the commission of a crime, murder for example, and insanity is set up as a defence?

Ans. The jury ought in all cases to be told that every man should be considered of sane mind until the contrary were clearly proved in evidence. That before a plea of insanity should be allowed, undoubted evidence ought to be adduced that the accused was of diseased mind, and that at the time he committed the act he was not conscious of right or wrong. This opinion related to every case in which a party was charged with an illegal act, and a plea of insanity was set up. Every person was supposed to know what the law was, and therefore nothing could justify a wrong act except it was clearly proved that the party did not know right from wrong. If that was not satisfactorily proved the accused was liable to punishment; and it was the duty of the judge so to tell the jury when summing up the evidence, accompanied by those remarks and observations which the nature and peculiarities of each case might suggest and require.

Quest. III. In what terms ought the question to be left to the jury as to the prisoner's state of mind at the time when the act was committed?

No answer was returned to this question.

Quest. IV. If a person, under an insane delusion as to existing facts, commits an offence in consequence thereof, is he thereby excused?

Ans. If the delusion were only partial, the party accused was equally liable with a person of sane mind. If the accused killed another in self-defence he would be entitled to an acquittal, but if the crime were committed for any supposed injury he would then be liable to the punishment awarded by the laws to his crime.

Quest. V. Can a medical man, conversant with the disease of insanity, who never saw the prisoner previously to the trial, but who was present during the whole trial and the examination of all the witnesses, be asked his opinion as to the state of the prisoner's mind at the time of the commission of the alleged crime, or his opinion whether the prisoner was conscious, at the time of doing the act, that he was acting contrary to law? or whether he was labouring under any, and what delusion at the time?

Ans. The question could not be put in the precise form stated above, for by doing so it would be assumed that the facts had been proved. When the facts were proved and admitted, then the question, as one of science, would be generally put to a witness under the circumstances stated in the interrogatory.

Mr. Justice Maule agreed with the judges in respect to the answers returned to all the questions excepting the last; from this he entirely dissented. In his opinion, such questions might be at once put to medical men without reference to the facts proved; and he considered that this had been done, and the legality of the practice thereby confirmed on the trial of M'Naughten.—*Brit. and For. Med. Rev.*, July 1843. T. R. B.

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72. *Rupture of an Aneurism of the Left Gastro-epiploic Artery.* By Dr. Alle.—A young woman, in the fifth month of her pregnancy, attended a ball with her admirer, where she danced till two o'clock in the morning. She was now seized with such violent pain of the abdomen, that she had to be carried home. The medical attendant, who was summoned to the patient, found her cold, pulseless, and with all the symptoms of effusion of blood into the abdomen. She died very shortly afterwards. The post-mortem examination, which was performed by Dr. Allé, discovered the abdomen to be quite full of blood, partly fluid, partly coagulated. He imagined, in the first instance, that the hemorrhage probably proceeded from a rupture of the ovarium or tube, in consequence of extra-uterine conception, but careful examination showed everything in connection with the fœtus in a healthy state. The source of the fatal hemorrhage was discovered to be the left gastro-epiploic artery, which was enlarged at one point into an aneurism, and had there given way.—*Lond. and Edin. Med. Journ. Med. Sci.*, March 1843, from *Oester Med. Wochens.*, No. 51, 1842.

AMERICAN INTELLIGENCE.

ORIGINAL COMMUNICATIONS.

Of the state of mind necessary to constitute a valid will. Case of Stewart's executors v. *Lispenard, as tried and decided in the courts of the state of New York.* By T. Romeyn Beck, M. D.

Anthony Lispenard, Sen., died in 1806, leaving two surviving sons, Leonard and Anthony,—two daughters, Alice, and Sarah wife of Alexander L. Stewart,—and one granddaughter, an only orphan child of his daughter Helen Bache. His last will and testament, dated Dec. 24, 1802, contains among other matters, the following:—

"My will further is, that the sum of seven hundred and fifty dollars be allowed and paid to my beloved wife Sarah, every year during her natural life, either in half yearly or quarterly payments, as she may elect to receive the same, to commence immediately after my decease, but which provision is intended to be in full and lieu of her dower. And as it has pleased Almighty God that my daughter Alice should have such imbecility of mind, as to render her incapable of managing or taking care of property, my will further is, that she be allowed for her maintenance the sum of five hundred dollars annually during her natural life, and that my executors hereinafter named pay out of the income of my estate to my said daughter Alice, the said sum of five hundred dollars, in half yearly payments, to commence immediately after my decease."

The remainder of his estate was to be equally divided among his other children and his granddaughter.

In January, 1818, Anthony Lispenard, jun., died unmarried, intestate and without heirs, whereby his sister Alice succeeded to one-fourth of his estate, or one-sixteenth of the estate whereof her father died seised and possessed.

In January, 1836, Alice Lispenard died, aged 55, leaving the following will, dated August 27, 1834.

"I give and devise all my estate, real and personal, whatsoever and wheresoever, whereof I shall die seised or possessed or entitled unto, of what nature and kind soever, to Alexander L. Stewart, his heirs, executors, administrators and assigns forever, to his and their own use and benefit, and I hereby constitute and appoint him sole executor of this my will, and in case of his decease before me, then I give, devise, and bequeath all my said estate to his daughter, Sarah Skillman, her heirs, executors, administrators and assigns forever, to her and others own use and benefit, &c. &c. This disposition being made by me in consequence, and as a testimony of my remembrance of the care and kindness manifested towards me by my said relatives, Alexander L. Stewart and Mrs. Skillman."

On Mr. Stewart, the executor above named, asking probate of this will at the Surrogate's Court for the County of New York, its validity was contested by several of the heirs-at-law, and the state of mind of the deceased during her whole life, but particularly at and near the time of making the will, became the subject of investigation.

I propose analysing the testimony according as the witnesses were acquainted with her from childhood onwards; but previous to this, it may be as well to give the depositions of the witnesses to the will, both of whom were physicians, and in attendance during her last illness.

Dr. John Neilson saw Alice Lispenard execute said will by making her mark and acknowledging it to be her will, and he witnessed it in her presence, at her request. She said she wished the will executed in favour of her brother. He considered her competent to make a will, and she did not appear at that time to be under any restraint. The testatrix could not write, she was not aware whether she could read or cypher. She attended to household concerns (residing in the family of Mrs. Stewart) so far as to transact any errand on which she was sent, very correctly. He often conversed with her, but did not find her of ordinary understanding, and believed her to be a weak woman, but considered her competent to take care of her own property, and he further explained the previous remark by saying that she was a woman that understood perfectly well what she was doing, but of weak judgment. She never entered into much conversation. Her memory was good, and even extraordinary, because when questions were asked concerning things that occurred a long time back she answered correctly. "During her last illness, when she was attended by Dr. Hunter, I was called in as her physician to see her, I think it was the day previous to her death; I asked her how she did, she said she had been very sick, and was so then, and that Dr. Hunter had been giving her medicine, and she told me what she had taken, and what had been done for her several days past, and it was stated by those around her, that her account was correct."

Dr. Abraham T. Hunter had known the deceased for ten or fifteen years, and had seen her during that time almost every day, and for the last six or eight years had paid particular attention to her, as an observer of her capacity. He conversed with her frequently, but not for any length of time. He confirms all the particulars attending the execution of the will, as given by Dr. Neilson, and subscribed his name as a witness at her request.

When he first became acquainted with her, he was led to suppose from her manner that she was an idiot, but after paying more attention to her and getting into conversation, he found her memory good and her ideas well arranged. She was very near-sighted, and this made her awkward in her appearance, and she was also very reserved and retired, so that it "became necessary to draw her words out of her." "Three days before her death, she said she was going home. I asked her what she meant. She said she was going to her God, and felt perfectly happy in her mind. She was then much exhausted, and I said nothing more to her."

As to the state of mind of Alice Lispenard during childhood and youth, the following witnesses testify.

Mrs. Satterthwaite, a near relative of the family, had known her from her infancy. From early life she needed a person to take charge of her, she was incapable of assisting herself; she required washing, nursing, and putting to bed the same as a child, until she was 22 or 23 years of age. Her general appearance was that of an idiot; she had a silly and unmeaning laugh when spoken to, with a foolish manner of hanging her head, and of answering a question. She could neither read, write, or sew. Attempts were made in vain to instruct her from seven to twelve years of age; she was very high tempered, and occasionally violent and abusive in her language. She never joined in amusements with the rest of the children after she was grown up; she had known her to dribble at the mouth.

This witness appears to have seen the deceased only occasionally after 1813, and all attempts to hold conversation with her proved fruitless.

James Davidson, aged about 80, held some lots of Mr. Lispenard, adjacent to the garden of the latter, and which he cultivated as a flower garden. He was allowed free access to the premises of Mr. L., and visited in his family. The manners of Alice, then a child, were very reserved and shy to strangers, but after a few meetings she became very familiar with Mr. Davidson. She was much indulged, and allowed to do as she pleased. He frequently saw her in the garden and greenhouse of her father, and she would converse on the different plants, of which there was a great variety, and speak of their beauty. It was the opinion both of Mr. and Mrs. Davidson, and they had repeatedly conversed on

the subject, that if Alice had received an ordinary education and been properly managed, she would have been a very shrewd girl.

Elizabeth Brower, aged 52. Alice and herself were playmates together. Alice was at this time about seven or eight years old, and the witness does not recollect any difference between her understanding and that of other children, nor was she more watched or looked after. There was a female teacher employed in the house, but Alice was much indulged and neglected. Mrs. Brower again saw her after an interval of ten years: "she inquired how I had been, about my family, and about my brother. She asked me regular questions, and I answered them. She appeared to be rational and intelligent."

Jane Martin, at the age of nine was a playmate of Alice, then two or three years older, and did not at that time perceive any difference in point of intellect between her and the rest of her playmates. She was exceedingly indulged by her father; any thing she wanted she must have, and if she cried, he would coax her. Her temper was sullen and obstinate; she was allowed as much beer as she wanted, and would send the servants for it. She went to Mrs. Sibbly's school for one or two quarters during the warm weather with her sister (afterwards Mrs. Stewart).

In 1815, my daughter went up to the old house, where Alice was then boarding with Mrs. Godwin: "they told Alice it was my daughter, and she sent me some flowers by her."

Jemima Vreeland, aged 54, was, during childhood, in habits of constant intercourse with Mr. Lispenard's family, and for two years went to school with his children, Sarah and Alice. The latter could play and learn her lessons, when she chose, like the rest. Witness was in the same class with her. She could spell and read some, but only in the spelling book; she would frequently neglect her lessons, and Mrs. Montagnie (the school mistress) would make her sit down on a seat and learn her lessons; this she did, "unless her father interfered to prevent it, and that he often did." Witness also testifies to seeing her write large hand, and sew pocket handkerchiefs and towels. She was obstinate and self-willed, and her father always appeared to give way to her. Each of the three last witnesses confirm the statement of her being near-sighted in childhood.

William Baldwin, a coloured man, was a servant in the family of Mr. Lispenard for ten years prior to his death, and he remained four years subsequent with his son Leonard. Alice was, when he first went there, about fourteen or fifteen years old. She differed entirely from the rest of the children; she did nothing, took no part in any thing about the family, and did not appear to be competent to do any thing. She had always a female during the lifetime of her father to take care of her, to dress, undress, and attend to her room. Her appearance was different from that of other young ladies, and in his opinion, she had no understanding at all. At about twenty years of age, she began to drink to excess.

Phœbe Thompson, a coloured woman, servant in the family, first knew Alice when she was about sixteen years old, and the witness fifteen. Witness continued to work in the family until the old people died, and during all that time had constant opportunities of seeing and observing Alice. She was in the habit of attending to the family affairs, when asked to do so, "would tell her mother what had come from market, and her mother would give her directions concerning dinner, which she would convey to the kitchen;" the household at this time consisted of about thirty-five persons.

It was during this period that Alice became intemperate. Every day for years, she would begin to drink about ten o'clock and continue until night. From ten until one was the worst time, and if crossed, she was violent in her temper. But she continued carrying messages to and from the kitchen (which was at some distance from the house) as before. Her parents put no restraint on her habit of drinking, but rather encouraged her in it. For some time she drank only beer, but when the brew-house was done away with, it was either brandy or spirits. When in liquor she used to dribble at the mouth, and she frequently reeled or staggered. The servants, however, even at this time, attended to her orders or directions the same as they would to any other member of the family. She used

to bring the clothes to wash, would take them off the lines, and "she would always let us know if a shower was coming, that we might take in the clothes." She was much indulged by her parents; no one dared to control her, and she had frequent differences with her brother Lispenard, who, with his family, resided with her father.

This witness again saw Alice for several months during the last years of life, and while she was residing in the family of Mr. Stewart. The dribbling was entirely gone; her temper, although still cross when displeased, was greatly improved; she manifested much attachment to witness as an old servant of the family, and remembered all those who had formerly belonged to it. She assisted Mrs. Stewart in her family affairs, and was more particular as to her dress, and the arrangement and order of her room than she had ever been.

Harriet E. Freeman, aged about 43. Witness's mother was the housekeeper of Mr. Lispenard for nine years: during that time Mrs. Freeman resided in the family. She was about twelve years old when her acquaintance with Alice commenced, and who was probably about twenty. Alice was considered silly; she would cry on the most trifling occasions; was not allowed any money, nor to go out alone; she generally sat at the window, day and evening alone, and no person conversed with her, nor did she converse with any body. She had no knowledge of the value of money or of property.

I shall presently state Mrs. Freeman's testimony as to Alice's condition at a more advanced period of life.

Isabella Lee, went at two years of age on the farm of Mr. Lispenard, and remained there until she was sixteen. Alice was probably from seven to nine years older. Mrs. Lee was in the constant habit of playing with her and her sister at her father's house. She joined in the usual sports, and being the oldest, often took the lead in them. She went to school with the other children to Mrs. Montagnie (in her father's house). She was not an attentive scholar, but could read in the spelling book; she sewed as the rest of the children sewed; was very obstinate; much indulged; very near-sighted; and was allowed free access to wine, and used it too freely. Witness met Alice after a long interval, some four or five years ago in a stage in New York, and asked if she knew her: she replied yes. "I asked her if she knew my name: she said yes, my name used to be Bella Hollaway, which was my maiden name."

Mary Bleecker was a relative of the Lispenard family, and was intimate there when a child, and also in after years, always considered Alice as an idiot, and did not deem her capable of conversation, and never heard her say more than yes and no. Alice was always quiet and still, and when a child, did not join in the usual sports, but usually kept aloof and would not look on. Mrs. Bleecker's opinion of her being an idiot was formed from her manner, silence, and appearance. Witness has not been in her company since her father's death.

Elizabeth Stanton, aged 68, had been an inmate in the family several years when a child, as her mother was a servant in it. As Alice grew up, witness noticed that she was not like the other children, she took no part in their diversions.

I might quote the testimony of other witnesses as to this period in the life of the deceased, but it would not furnish any additional facts or circumstances.

From 1800 to about 1814, the following may be mentioned. *Charles Graham*, Counsellor at Law, was in the habit of visiting the family, and occasionally saw Miss Alice. He formed the opinion that she was a person not of vigorous intellect, but perfectly competent to the ordinary transactions of life. He positively asserts that she was not considered an idiot in the family. "I should not have relied on her judgment as to buying and selling real estate, but as to any article she might want for her personal use, I think she was perfectly competent. I conversed with her within six or eight months of her death, and found no variation of her intellect from what it was in her father's time."

Mrs. Clerke and *Mrs. Ducachet*, both relatives, speak of her as being considered of an imbecile mind by the family and treated as such. Neither of them

appears to have ever held a conversation with her. They considered her incapable. Her countenance was very vacant; her posture awkward when spoken to; she would giggle and laugh in a silly manner.

Mrs. Gavitt knew Alice from 1800 to 1806, as her father lived opposite to Mr. Lispenard's. "I was often in the garden and yard, and have been in the house, but not often; the girl Alice used to attract my attention, because she acted so very foolish; she would stand for a long time and look at the sun, as if she was in a kind of stupor and amaze; she appeard to be entirely void of intellect at that time."

In the opinion of the Surrogate, it is stated that on the death of her father in 1806, she resided with her brother Leonard until 1813, when she was put out to board with them until 1827. The testimony as to this period is important.

Harriet E. Freeman. Alice boarded with her about two years. She knew nothing about sewing, nor could she be taught it; she could partly dress and undress herself, but "we generally put her cap on and fixed her dress." Alice was never suffered to go out alone in the street; she was occasionally taken to church, but took no notice of the exercises. Witness had also attempted in vain to teach her the the Lord's Prayer. She was very passionate, often for a mere trifle, and would cry childishly. She would eat voraciously, and whatever was put on her plate; was allowed four glasses of wine daily. On the cross-examination, witness stated, that when endeavouring to teach her the Lord's Prayer, Alice sometimes would laugh, and they could not make her speak, and again she would say she did not want to. At other times, she would begin to repeat and then break off with the same expression.

Mrs. Burtsell, a sister-in-law of Mrs. Freeman, and often at the house while Alice was boarding there, never heard her attempt to speak several sentences connectedly. She was always helped at table, and Mrs. B. never saw her desire or ask for any thing. She would eat too much, unless restrained.

Mr. Browning, a boarder at Mrs. Freeman's, confirms most of the above statements.

Elizabeth Stanton. Alice boarded with her mother, Mrs. Godwin, for one year, (probably 1816 or 1817.) She was not thought capable of taking care of herself, and therefore was never left alone. They would sometimes put sewing in her hands, and she would sew a little and then throw it down and say she would do no more. Witness did not consider her competent to purchase articles; believing that she did not know the value of money or of property, and hence, did not suppose her capable of making a will. She was sullen in her manner and appearance, and never entered into conversation.

Helen Gray. Alice came to board with her mother, Helen Taylor, in 1817, and continued there until 1827. Mrs. Gray resided in the family during upwards of four years of the above term, and visited frequently during the remainder. Mr. Stewart, who paid for her board, directed that Alice should not be suffered to go into the street alone, and after some time, requested that she should be directed to carry up wood or water, in order to exercise herself. She did so when ordered. She usually sat still by the window or walked about the room. Her temper was violent; she once struck witness in the face with her hand, and at another time, when she was alone with the children, choaked witness' little boy until he was black in the face. Mrs. Taylor, when she behaved ill, would send her to her room till she promised to behave better. She would stay there until sent for, and then if asked whether she would do so again, would say no, but never came voluntarily to make apologies. When any trifling thing did not suit her, she would swear. She was fond of cake and sweet things, and Mrs. Taylor would, when she went out, tell her that if she behaved well she would bring her something, and cakes and candies were always brought for her and the children. If this promise was not fulfilled, she would cry and make a fuss. She would pick the ends of her sleeves and apron strings to pieces, and rub her handkerchief in pieces. Mr. Stewart sometimes visited her, and would say to her, "aunt Elsie, are you a good girl?" She would just put down her head in her neck and laugh; sometimes she would say yes, and sometimes she would not say any thing; she generally laughed when any one spoke to her. She ate

greedily, and was always helped to her food, which was cut for her. She generally sat stooping forward. In the opinion of witness, she did not know the value of money.

Henry B. Taylor and Maria Taylor, the son and the daughter-in-law of Mrs. Taylor, and resident in her family, confirm the testimony of Mrs. Gray in every material respect.

Mrs. Warner lived for two years next door to Mrs. Taylor, and saw Alice almost daily. She was very reserved to strangers, but conversed freely and frequently with witness, and several times during Mrs. Warner's absence from home, took charge of her infant child, six months old. She was frequently left with it an hour at a time. Mrs. Warner often saw Alice dress herself, and on one occasion, was with her at a store in Broadway, and saw her buy thread, needles, and pins, and pay for them. Some years afterwards witness saw Alice at Mr. Stewart's, when she recognized her, called her by name, and asked after the child, of whom she had been so fond.

Mrs. Murden and Mrs. Vincent, also knew Alice when boarding at Mrs. Taylor's, and they corroborate the testimony of Mrs. Warner, as to the conversing freely with her, and her ability to dress and undress herself, and the care which she took of her clothing.

The present will be a proper place to mention that, in consequence of the proposed conveyance of some property by Alice, the opinion of certain physicians was taken as to her mental capacity. And in the appendix to the testimony, the certificates of Drs. Neilson, Stringham, Guy C. Bayley, Barrow and Graves are given. They unite in stating that they had frequent opportunities of visiting and conversing with Alice, and that in their opinion, her mind was sufficiently strong to direct her in the ordinary occurrences of life, and that her unfavourable appearance was rather to be attributed to neglected education than to mental incapacity. These certificates appear to have been given about the year 1815.

Drs. Bayley, Barrow and Graves, were examined before the Surrogate. The former stated, that if his opinion was now to be formed from further observations, he would be disposed to allow her less of mental capacity than he formerly did. She did not appear to know enough of the nature and value of property. The other medical gentlemen adhered to their former statement.

As already hinted, Alice was taken into the family of Mr. Stewart about the year 1827, and remained a member of it until her death in 1836. She was treated with great kindness and attention by Mrs. Skillman, daughter of Mr. Stewart (afterwards the wife of the Rev. Charles S. Stewart). She was gradually weaned from her habits of intoxication, and became in some degree an active member of the family. In comparing and analysing the testimony concerning her at this period, I omit a notice of that of James Watson Webb, Rev. Charles Stewart, and his wife, and the Messrs. Satterthwaite's, as their near relationship and interest in the disposition of her property, might be supposed to give a shade of colouring to their opinions. Of the many witnesses presented, I notice the following.

Isabella Henderson resided as seamstress and nurse in the family of Mr. Stewart, during part of 1834–5. She was engaged in washing and dressing Alice, and always took her to be an idiot. Her conduct was so silly, and her temper outrageous. Witness never knew her to hold any connected conversation, and further states her inability to read or write, and her ignorance of the value of property. Alice was treated disrespectfully by the servants, but with kindness by the members of the family. If she behaved ill, her victuals were sent to her room.

Sarah Ann Fisher was also a servant in the family during part of 1834–5, and had particular care of Alice during that time. Alice required assistance to dress herself, but not to undress. She was uneducated, and witness was unable to make her understand religious things. When in a passion, she would sometimes strike persons, and was then sent to her room, and her meals were sent in to her. Sometimes she was very penitent for this, and would come to the persons she had offended and ask their pardon. She always kept her drawers of clothes in

order, and when any required repairing, she would show witness what she wanted to be done. When Mrs. Stewart was absent, she had the keys of the pantry; and if any thing was wanted, would give it to those who asked her kindly, but not without hesitation. To those who were sick in the house, she would come perhaps three or four times a day, and ask them how they did. She was attentive to what she knew she had to do; and if in a good humour, would perform it, but sometimes she would get into a violent passion. She would but seldom joke; she would often repeat simple childish stories. Witness considered Alice void of understanding, and that she did not know right from wrong.

Rev. Duncan Dunbar had been acquainted in the family of Mr. Stewart for eight years, and was in the habit of conversing with Alice. Her answers and remarks were pertinent and sensible, and thus struck witness as being in contrast with her appearance, which was awkward and wanting in politeness. Her reserve wore off, and he positively asserts, that he never saw her do any act, nor say any word that would indicate mental imbecility. Mr. Dunbar was absent for a few months in Europe, and on his return called at Mr. Stewart's. He found Alice alone in the parlour. As soon as he spoke she recognized his voice, shook hands, and congratulated him on his return, inquired as to the health of Mrs. Dunbar, and expressed regret that the ladies of the family had driven out. At one period, Mr. Dunbar supped by request, every Sunday evening for five or six months at the house of Mr. Stewart, and conducted family worship. He never on these occasions saw any thing about Alice to change the opinion above expressed.

Edward V. Price was a clerk in the office of Mr. Stewart in 1834-5. Alice was in the daily habit of coming about matters appertaining to the family and household, and on such occasions, addressed herself to witness, and exhibited a perfect knowledge of matters, and employed correct and proper language. She had a good memory, and conversed with propriety on ordinary occurrences.

Sarah Sargeant, was employed for several years in Mr. Stewart's family, in mantua-making and other sewing. Witness passed many whole days in the same room with Alice, and sometimes rested at night in the same room. She conversed freely and sociably with witness on ordinary affairs, and never evinced any thing indicative of imbecility of mind. Her memory was good, and she was a keen observer. She would dress herself as well as other females generally do. She was gradually weaned from the habit of drinking, until at last, she abstained entirely, saying she did not want it, and this with the kindness shown to her by the family, had a very manifest effect on her attention to dress and her behaviour. She ate at table with the rest of the family, and cut her own meat.

Patrick Ward, *Michael Mullen*, *Rhoda Griffith*, *Betsey Stockton*, servants at various times in the family, confirm the above statements. Alice was manager of the house when the other ladies were out; she had the keys of the pantry, and gave out such articles as were wanted; gave directions when messages were to be taken; spoke to servants when articles were out of place; and when it was desired to purchase things offered at the door, would ask the price and go and procure money to pay for them.

Hannah Norman, housekeeper, and *Theodosia Van Dalsen*, seamstress, are equally favourable in their opinion of the mental capacity of Alice.

Thomas Brown, house painter, *Ebenezer Smith*, mason, *John Robinson*, carpenter, *Samuel Spence*, workman, and *Ezekiel Yoemans*, purchaser of flour, vegetables, &c. for the family, all appear to have known and conversed freely with her, and found her of sufficient knowledge. The mechanics state expressly, that they frequently received directions from her, as to what job it was wished they should do; and uniformly found them correct. Mr. Yoemans was in the habit of receiving money from her, which she procured from the clerks, and thus transacted the affairs connected with his occupation.

Among visitors who were quite intimate in the family, *Moses Hoyt* and *Horatio Averill* were presented as witnesses. The former states his surprise at her com-

mencing conversation with him, at a time when he supposed her to be an idiot (1834), and was so informed. He continued his acquaintance with her, and speaks favourably of her state of mind.

The testimony of *Jane King*, who appears to have been a servant in the house and an attendant upon Alice during the last eight months of her life, is not materially variant from that just noticed; although she states that Alice did not appear to understand money matters. In some things she appeared quite smart, and to others quite insensible.

Thomas Edmonds was the confidential clerk and book-keeper of Mr. Stewart nearly fourteen years, and during nine of these, Alice was employed as the messenger. The office was in one house, and Mr. Stewart resided in the next one, but there was a communication between them leading to the office. Alice came sometimes daily, or three or four times a week to get money to pay bills, telling Mr. Edmonds particularly what it was for, and the part that was to be charged to herself, and that which came under the head of family expenses, &c. She appeared also to pay much attention to domestic matters, whether servants had executed errands, &c. It was the object of Mr. Stewart to keep her so employed, as to give her suitable exercise, Alice being a large and corpulent woman. Mr. Edmonds sometimes left her in charge of the office, and on his return, she would mention what had occurred. She did not need a person to look after her beyond what her years and near-sightedness might require. Witness conceived her competent to make a will.

The only remaining witnesses whose testimony I will refer to, are *Dr. John W. Francis*, and *Dr. James M'Donald*. They were respectively asked, whether when a person has been born of a feeble mind, they have ever known a new development of intellect after the age of forty. They replied in the negative, they do not think such an occurrence probable. The following question was also put. Suppose a person born with a feeble mind, has been permitted to acquire habits of intemperance in early life, and has continued in these habits for a long series of years, and then that they are entirely corrected, and pains are taken to instruct the individual, may not the mind of such person in after life exhibit more intellect than it did before? To this, Dr. Francis' reply was, "yes, the history of inebriation shows it;" Dr. M'Donald's, "It is possible, but I should fear not, because disease from the long use of ardent spirits might be superinduced upon a weak brain."

The testimony, of which the above is a brief, but I trust a faithful analysis, occupies an octavo volume of nearly three hundred pages. The Surrogate (James Campbell, Esq.,) made a decree on the 26th of July, 1838, *refusing to admit the will to probate*. His opinion is given in full in the 26th volume of Wendell's Reports. He reviews the life of Alice according to the three periods already noticed, whilst she lived in her father's house, the time when she boarded with strangers, and that during which she lived in the family of her brother-in-law, Mr. Stewart.

Of the first, he remarks, that the attempt to instruct Alice failed, and the extraordinary and mortifying fact was disclosed that she was incapable of being taught to read, and much less to write, and her parents were obliged to abandon the attempt as altogether hopeless. As she passed from adolescence to womanhood, he observes that her mental defects became more apparent and striking, and he refers to the testimony of Mrs. Satterthwaite, of Baldwin and of Elizabeth Stanton, as far more decisive and positive than that of Mr. Davidson, Mrs. Lee, Mrs. Brower, Mrs. Martin, and Mrs. Vreeland, whose means and ability of observing and judging of the actions and character of Alice were certainly inferior to those produced on the other side. The will of her father is quoted as an evidence of his solemn and deliberate opinion. He doubts also, whether the habit of too

free indulgence in liquor was so great, or so long continued, as to produce any marked effect on her mind.

The testimony of those individuals with whom she boarded, and who were residents with her, must outweigh that of casual acquaintances and visitors.

The Surrogate also lays great stress on the value of the testimony of the servants in the family of Mr. Stewart, (Fisher, Henderson, and King,) and attaches but little to that of "the physicians, clergymen, lawyers, seamstresses, washerwomen, carpenters, masons, members of his own family, and occasional visitors at his house. Vague generalities and opinions, (he observes,) accompanied by no specific facts, actions and circumstances, characterize this testimony on the part of the executor; and when properly weighed and analysed, will be found to amount to little more than this, that Alice had her prejudices and attachments, and was not insensible to neglect or attention; that she could remember persons whom she had not seen for a long time; that she could carry and bring back messages with accuracy and a kind of mechanical precision; and that she could make and answer inquiries and questions on trite and familiar subjects, such as the state of the weather and of health. Now the ability to do all this, and even more, is not incompatible with great imbecility of mind," and in corroboration, he adduces the *dicta* of Sir John Nichol in *Ingram* v. *Wyatt*.

The fact of the employment of Alice in a daily round of drudgery imposed on her, is considered as a strong and conclusive proof of want of understanding, and the injustice in the disposition of her property is also dwelt upon. His final decision was, that Alice Lispenard at every period of her life was intestable for want of understanding, and the instrument propounded as her last will and testament was rejected.

The cause was affirmed *pro forma* in the Circuit Court, the next in judicial order, and from that carried up to the Chancellor's. That officer, in his opinion, remarks, that after a "very careful examination of all the testimony, I am perfectly satisfied that children in general at the age of eight years, who have had the same care bestowed upon them that Alice Lispenard had during the life of her parents, and particularly during the first twelve or fifteen years of her life, would be as competent to understand the nature and value of property, and to dispose of it by deed or will as she was at the time she made her mark to the instrument propounded as her will in this case." He also considers the declaration of her father, as made in his will, to be a strong and controlling circumstance. The decision of the Surrogate was constantly affirmed.

The cause was finally argued and decided in the Court for the Correction of Errors, in 1841. C. W. Sanford and Willis Hall (Attorney-General) appearing for the appellant, and B. F. Butler for the respondents. It is remarkable that no judge of the Supreme Court gave an opinion on the case, and that the decision of it constantly remained with the *lay members*, as they are called. The decree of the Chancellor was reversed by a vote of 12 to 6. The opinions of G. C. Verplanck and J. B. Scott, senators, and both for reversal, are published in detail. I may briefly notice some new and interesting points considered by the former.

Mr. Verplanck assumes and asserts the principle, that the right of testamentary bequest is not a mere institution of positive law, but a natural right, subject to the restrictions and regulations of civil legislation, yet not

its mere creature. According to the statutes of the State of New York, all persons except idiots, persons of unsound mind, married women and infants, may devise their real estate, by their last will and testament duly executed. Now the line of unvarying authorities, shows that in legal intent the natural defect of mind thus excluding persons from the ordinary rights of society does not consist in a limited degree of intelligence, but in an entire absence of it. An idiot is one, according to Fitzherbert, "who has not any use of reason, has no understanding to tell his age, who is his father or mother, what shall be for his profit and loss." Again the term *non-compos mentis*, or of unsound mind, imports not weakness of understanding, but a total deprivation of reason. "The ancient rule is thus expressed and reiterated by the latest and best text writers on this subject"—*Shelford on Lunacy.* "A person being of a weak understanding, so he be neither an idiot nor a lunatic, is no objection in law to his disposing of his estate. Courts will not measure the extent of people's understandings and capacities; if a man, therefore, be legally *compos mentis*, be he wise or unwise, he is the disposer of his own property, and his will stands as the reason for his actions."

True, the courts have in many cases, made the bequests of the imbecile void, but not on account of the general and positive disability of the party for all similar acts, but because of the relative character of the will or contract itself, and of all the external circumstances in proof, to the mental capacity of the party. The whole transaction taken together, with all its facts, of which the proof of mental weakness was one, showed that the consent, the very essence of the act, was wanting to *that particular act.*

In applying this view of the law to the case before him, Mr. Verplanck dwells on the numerous witnesses, who have spoken favourably of a measure of understanding in Alice, while others, he concedes, concur in representing her as silly and stupid. If, however, we regard the whole evidence, we shall find that the testimony of those who represent her as having been merely a dull and imbecile, but not an idiotic person, much outweighs those who depose to the lowest grade of intellect, both in numbers, station, education, and intelligence; and it is positive and *affirmative* in its character.

The clause in the will of her father is to be taken as it is expressed. He considered her incapable of managing and taking care of property. If he had deemed her an idiot, the payment of the annuity would have been directed to be made to trustees for her support. In the words of Judge Washington, "The capacity may be perfect to dispose of property by will, yet very inadequate for the management of other business, as for instance, to make contracts for the purchase and sale of property."

Whatever may be the opinion of the reader on the merits of this case, there can be no doubt of the talents and ability with which Mr. Verplanck (as in numerous other cases before the Court of Errors) advocated his views.

Case of induction of Premature Labour. By J. V. Herriot, M. D., of Cannonsburg, Washington Co., Penn. [Communicated in a letter to C. D. Meigs, M. D., dated Dec. 26th, 1842.]

Mrs. A., thirty-five years of age, good constitution, short, compact, bony

frame, pelvis natural figure, but (judging by the finger,) under the ordinary size in all its diameters, with a copious development of adipose tissue—has had four living children without the aid of instruments of any kind; her labours, however, she says were very severe. Since these she has had three still-born. In the first of these cases I attended her—a vertex presentation, with prolapsus of the umbilical cord (the cause of its death); a severe and protracted labour. In the second case vertex presentation, prolapsus of the cord; the labour protracted and severe, and the head having engaged but partially in the superior strait, her delivery was completed by the application of the forceps. In the third another physician attended her, and, as I am informed, her labour continued with violence for fifteen or sixteen hours, and the head not having engaged in the superior strait, the perforator was resorted to, and her delivery thus accomplished. These means became necessary in consequence of the size of the fœtuses, each one being of increased magnitude. Some ten or twelve months after this, she became pregnant again, and was very anxious about her own and her infant's safety. At this period I recommended to her Dr. Holcombe's method for diminishing the size of the fœtus, which to her was not very acceptable. Having seen her husband on the 4th ult., I prescribed best olive oil, a wineglassful two or three times per day—pro re nata—and promised to visit her as soon as convenient. Accordingly on the ninth I visited her and found her much agitated on the subject of my call. I then proposed to her the induction of premature labour between the seventh and eighth month of gestation: setting forth to her the prospect of alleviating her sufferings and saving the life of her infant—her own dangers also were not forgotten. She had the matter in solemn and serious consideration, till the 5th inst., when I visited her again, and she accepted the proposition I had made. Feeling that a greater degree of responsibility rested on me in this than in an ordinary case, I requested that another respectable physician be present on the occasion. Accordingly my respected friend Dr. D. S. Stephenson, of this place, on the 8th inst. accompanied me to her residence, some five or six miles distant; and in the evening, between the hours of six and seven o'clock, my friend and self having made an examination, per vaginam, found the parts disposed to harmonize in the undertaking—the mucous surfaces lubricated with mucus, and the os tincæ soft and disposed to dilate. The writer then ruptured the membranes by introducing a female catheter through the os tincæ and puncturing them with a wire: my friend having first given his assent to the propriety of the operation.

At the instant a portion of the liquor amnii escaped, and continued to discharge at intervals for several hours—contractions of the uterus were experienced shortly after the operation, but so slight, that during Thursday and Friday nights she enjoyed several hours refreshing sleep. Saturday morning, 5 o'clock, she awoke with pain, which continued regularly with increasing strength and frequency. Nine o'clock, the os uteri was dilated so as to admit the point of the fore and its fellow finger. At this period the presentation could not be satisfactorily ascertained. But, after the lapse of two or three hours, it was recognized to be a breech, with the right hip to the left acetabulum, and the left hip to the right sacro-iliac symphysis. At the next examination, the left elbow was discovered in connection with the left hip—which being pressed back in the absence of

pain, the breech came down and occupied the superior strait exclusively. This intruder, however, made its appearance frequently in the course of the labour, and was somewhat troublesome; requiring strict attention to keep it above the brim of the pelvis. At this period, to my mind and that of my friend, the prospect for the life of the child was gloomy; but after the breech fairly engaged in the pelvis, the pains became brisk and efficient, so that by five o'clock in the evening she was delivered of a living vigorous female infant, which from its appearance (we presume) would have more than equalled in magnitude, any of its predecessors,—after a gestation of seven months and seven days. We take her own reckoning, which, she says, she knows is accurate. It is scarcely necessary to remark that had this been a vertex presentation, the labour would have been comparatively easy, and of much shorter duration. But from what we know of this woman's former labours—the size of her children—her contracted pelvis and diminished strength, had she been permitted to go the full term of utero-gestation her delivery would have been a solemn and serious task. But as the method adopted in this case has fulfilled the most sanguine expectations of my friend and self, we are truly gratified—and the husband and wife, friends and relatives are all thankful that Divine Providence has smiled upon the means used to alleviate the mother's sufferings, and save the life of her infant; both of whom are doing well.

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Case of Twins in which both placentæ were expelled previous to the delivery of the last fœtus, without consequent hæmorrhage.—By Samuel Tyler, M. D., of Frederick, Md. [Communicated through Prof. Hodge.]

My father was requested to attend a female in labour on the morning of the 6th July, 1843, 10 o'clock, A. M. She had been delivered by her mistress two hours before (8 o'clock, A. M.) of a fine child. In a reasonable time after the expulsion of the fœtus, the placenta was discharged. The mistress observed that the placenta presented an unusual appearance and that the cord seemed larger than natural, but it was not until she had divided the funis, that she discovered there was another fœtus "in utero," and that she had mistaken a double placenta and a double cord for an enlarged condition of those two important organs.

When my father arrived, he made an examination per vaginam and discovered that the remaining fœtus presented the left shoulder. It was then more than an hour since the cord had been severed, and of course the life of the fœtus destroyed. In addition to the unfavourable circumstance of a shoulder presentation, there was firm hour-glass contraction of the uterine fibres around the body of the child. Having, in conjunction with the means usually calculated to relieve so firm a contraction of muscular fibre, made many unsuccessful efforts to turn the fœtus in order to convert it into a footling or breech case, he sent for me. On my arrival, I soon discovered (indeed it was for that purpose he sent for me) that embryotomy offered the only relief to the suffering female. After making several equally ineffectual efforts at turning, I proceeded to perform the operation, which consisted in removing with the scalpel the left arm, at the shoulder joint, and then opening the thorax by a puncture or incision between two of the ribs, and thus partially evacuating its contents. The delivery was effected—after compressing the thorax and abdomen, by carrying up the right hand to the breech, passing the finger into the rec-

tum, bringing down the breech, and then finishing the delivery "*secundum artem.*"

The patient was placed in a comfortable position, and every precaution taken to prevent or rather to relieve what seemed inevitable, viz: copious hæmorrhage; hour after hour passed by, the female continued comfortable and improving, and until the present time, more than four weeks since the delivery, not the slightest appearance of hæmorrhage has taken place, the abdomen is natural in size, and the female entirely recovered, and is nursing her infant.

Observe the peculiarity of such a result. Here is a case of twins, one child delivered easy and natural; both placentæ coming away, thus leaving a double placental surface exposed, the cords are divided by mistake, and, consequently the vitality of the remaining fœtus destroyed—it presents under the most unfavourable circumstances, the shoulder being the descending portion—it is impossible to move or turn it, owing to rigid hour-glass contraction—remedies best calculated to produce relaxation are made use of, but not until embryotomy is performed is the patient relieved.

Here we have a case not merely of simple prævia placenta, but a double surface exposed, there having been two placenta; the fibres of the womb, first in a state of rigid contraction, then the irritation consequent upon the performance of embryotomy, and lastly a state of excessive relaxation, and still not a drop of hæmorrhage, and the female entirely recovered. I present this case, so interesting in its nature, so apparently formidable in its character, hoping that those under whose observation it may fall, will be induced to investigate the cause of so favourable a result.

I may be allowed here to add the great importance of an obstetrician always being in attendance upon a parturient female, no matter how simple the presentation, or how favourable the circumstances of her case. Had a practitioner been present at the commencement of the case just related, the life of a human being might have been saved, which was certainly sacrificed to ignorant midwifery—though the result to the female was as fortunate as could possibly occur.

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The Spontaneous Expulsion of a large Polypus, two days after the delivery of a fine healthy male child.—By John Davis, M. D., of Smithville, Abbeville District, South Carolina.

May 23d, 1843: I was summoned to Mrs. C——, ætat. 32. When I arrived I found her to have been in labour twelve hours, with her fifth child. The presentation was natural; and the soft parts well dilated. The pains were, and I was informed, had been, pretty strong, for three hours previous to my arrival, yet they were irregular, intermitting, and of little effect. She was greatly exhausted by the continuance of her sufferings, and the violence of her exertions, and a serious question arose in my mind what I should do. If we would be governed by authors in general, it was a case in which the ergot might have been given with good effect. Considering the only difficulty, however, to depend upon the irregularity of the pains, I resolved to wait an hour or two, and see if nature herself would not accomplish the delivery; and to my great joy in half an hour the pains became more regular and forcible, and on examination I found the head advancing with a pretty fair prospect of a hasty delivery. It was now just entering the brim of the pelvis, when profuse hæmorrhage came

on, the woman sunk rapidly from copious loss of blood, the pains ceased almost entirely, and indeed the case became alarming. I ordered her such remedies as appeared most pressingly indicated, and in the course of half an hour the hæmorrhage ceased, the woman revived, the uterus regained its wonted powers, and in fifteen minutes more she was delivered of a large healthy male child. The after birth seemed to be slightly adherent, but was soon delivered with little difficulty, and without much hæmorrhage. In short all things seemed to do well, excepting the uncommonly severe after pains, which led me to place my hand over the abdomen, when I was a little surprised to find it but slightly diminished in size, especially immediately over the region of the womb. This led to a still further examination, *per* vaginam, and to my utter astonishment I discovered a large resisting tumour firmly impacted in the uterus. Satisfying myself as to its character I did not examine as to its location, as the soft parts were very tender to the touch, and as the patient was very much enfeebled; nor was it necessary, as that was not the proper time to search for a pedicle or neck, or if its location were ascertained, to apply the ligature.

I gave such directions as I conceived the case required at the time, and left the lady with the fullest assurance that I would see her as often as circumstances would permit. Late in the afternoon of the day following, however, I was requested to visit her in haste, "as her pains have returned with increased violence;" but before I arrived she was spontaneously delivered of a polypus, weighing eleven ounces, without the slightest hæmorrhage.

The polypus is now in my possession. Its pedicle or stem is about an inch long and about two in circumference: it is similar to a fungous excrescence, and is covered by a thick membrane. It is full of large veins, and arteries, some of the former being varicose.

This is the 19th of June, 1843, and the lady has recovered entirely; and says she feels much stronger than she did during the four last months of her pregnancy. She also states that she was not aware of there being any thing wrong about her womb till after she was three months gone, at which time it seemed to be fuller than ordinarily at that stage of pregnancy: and there was also a slight vaginal secretion. These seem to be the only signs, of which she is aware, that could be considered as symptoms of the disease. She is of a stout, robust constitution; and her general health has been good from her infancy with slight exceptions.

The present case, it is conceived, has several points of interest;* and if it should be worthy of your consideration, and a place in your able journal, it is at your service.

Effects of a large dose of Arsenic taken by a Lunatic. By A. B. Shipman, M. D., of Cortlandville, N. Y.

In the year 1838, a gentleman who had been insane two or three years, the cause of which was probably ill health from disorder of the digestive organs, acting upon a nervous temperament, took a teaspoonful of the white oxide of asenic with a view of destroying himself. It was taken immediately after eating a hearty dinner, and washed down with a draught of water. Soon after, or within half an hour, he vomited freely, and in the

* The above is merely a summary of the facts as they actually occurred, without comment.

course of the day a diarrhœa set in, which followed him a day or two. He then informed his medical attendant of what he had taken, and his regret and contrition at the act. All this time he experienced but little of what could be attributed to the poison, the diarrhœa was not attended with any thing peculiar, he had eaten his usual meals with a tolerable relish, and complained of no unusual burning or pain in the stomach and bowels. Within a week or so he was taken with severe pain in his legs and arms, which he described as most excruciating, the sensation he compared to the gnawing of rats, or the boring of a gimblet into the bones—there was some swelling of the legs and feet, but no preternatural heat. After the pain had continued some days, a partial paralysis of the limbs was observed. He took various medicines, mostly of the anodyne class, with stimulating liniments and frictions, which were persevered in for a length of time. The paralysis however remained obstinate for months. The strychnine was finally given, and continued several weeks. The paralysis gradually left him, and he regained his health and resumed his business as a merchant. But what was most curious to the physician, and to the patient of the most importance, was the complete restoration of his reason and ultimately his health. Previous to his insanity he was of a reserved and cautious disposition,—was taciturn, diffident, and exemplary in his conduct,—was on the point of contracting an eligible matrimonial engagement,—his pecuniary circumstances were unembarrassed. Yet all at once he became talkative, boisterous, and mirthful. Entered into speculations, contracted for farms and property which he did not want, supposed himself in possession of immense sums of money, and that his speculations would conduct him to boundless wealth. He insisted upon his marriage taking place immediately—invited every body he saw to attend his wedding. His marriage finally took place, as his friends imagined it might be a means of restoring him, or an exasperation of his malady a result of his wishes being thwarted. But these palmy days of ideal wealth and splendour soon wore away, and he sank down a gloomy, desponding, and dejected lunatic, unfit for business or society. He was however harmless, and lived with his wife for two or three years, attending to no business. He was in this state when he took what he imagined would be his last dose, but which in all probability was the means of restoring him to reason. Since that period, there has been no signs of insanity, and his health has been good since the removal of the paralysis from his limbs. He has resumed his business as a merchant, and conducts it judiciously and with success.

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Extraordinary case of Monstrosity, consisting in a plurality of toes (seven) on each foot. By R. C. Martin, M. D., of Wilkesboro, N. C.

Lowery Hawkins, ætat. 14, came to my office, from the country, on the 22d June, 1843, for the purpose of having two of his extra toes amputated—having on each foot an extra great and little toe, making 14 in all.

Lowery states that his mother (Sarah Hawkins) has six toes on each foot, and so distorted as to have prevented her from ever wearing shoes;

that she attributes her extraordinary vice of conformation, to the influence of maternal imagination during utero-gestation.

He says that he, also, has never been able to wear either socks or shoes, in consequence of which he suffers much during the winter season, and is very desirous to have the extra toes taken off. On examination I found that the supernumerary great toe on the right foot, came out or stood off at a right angle with the foot and toes (*see fig.*)—that it had, like a natural toe, two phalanges, but had no tendon or muscle extending to it, and of course the will had no influence on it; but what is more remarkable, the shape of the toe-nail, &c. had more the appearance of a thumb than a toe.

The extra great toe on the left foot differed from the right in coming out at a more acute angle, and having more the appearance of a natural toe. There was nothing peculiar about the extra little toes, except that they had no muscles extending to them. The feet were somewhat shorter and wider, particularly across the toes, than usual.

Extreme width from *a* to *b*, 5¼ inches. Extreme length from *c* to *d*, 8¾ in. Breadth of the plantar surface of the toes 4 inches, from *e* to *f*.

I amputated both of the great toes, on the morning of the 23d, at their articulations with their metatarsal bones; there was very little hemorrhage, and the patient did not suffer much pain from the operation.

The lips of the wounds were approximated and held in situ with adhesive strips; they healed partially by the first intention—the patient suffering little or no subsequent pain, and on the 4th of July he walked home, a distance of twelve miles, his feet being nearly or quite well, having on, for the first time in his life, shoes and stockings, and much gratified with the improved appearance of his feet.

Wilkesboro, N. C., Aug. 22d, 1843.

DOMESTIC SUMMARY.

Induction of Premature Labour, without Rupture of the Membranes.—Dr. Henry G. Clark reported to the Boston Society for Medical Improvement, Nov. 28, 1842, the following interesting case of induction of premature labour:—

"Mrs. S., æt. 30, from St. John, N. B., consulted me in May last; she was pregnant with her sixth child, and had always great difficulty in labour, only one of the five having been born alive, and that at 7 months, a female, now living, and 10 years of age.

"I had myself attended in her fourth confinement in 1837. I then found her to have a pelvis contracted in its conjugate diameter to less than 3 inches, by the projection of the promontory of the sacrum. She is short, of awkward figure, and has also lateral curvature of the spine. It became necessary to resort to perforation of the head at that time—delivery being otherwise impossible.

"At her last confinement, two and a half years since, she went to her native town, where, she informs me, it was thought proper by her attendants there, after three days sickness, to have recourse to the same measures. She did not recover from this for some months.

"It seemed to me that this was a proper case for the induction of premature labour. I therefore proposed it to her as the safest course for herself—as the

only one for the child. She readily consented to submit to this or any other procedure which might be deemed necessary.

"Nov. 22d. Dr. Townsend saw her this day in consultation, and confirmed my opinion.

"I proposed to myself the following method, viz.: 1st, to remove the viscid mucus which is found about the cervix uteri, and to dilate and irritate the parts moderately by the fingers, at certain intervals, until some effect should be produced. In addition, if this should not be sufficient to bring on the first stage of labour, to use the ointment of belladonna, and 2dly, as soon as this should be accomplished, to exhibit, at regular periods, small doses of ergot to *excite* natural uterine action.

"The last menstrual period was passed March 25th, so that she had now progressed nearly eight months.

"This morning, ordered a brisk cathartic. In the evening, I called again and made an examination. The finger was insinuated into the os uteri, and the secretions thoroughly removed. Considerable pain was excited by this operation, which continued at intervals for an hour, and then ceased.

"Nov. 23d, 9 A. M. Patient slept well all night, and has no pain to-day. Upon examination, the os uteri was found to be more relaxed than last night, and readily admitted two fingers to be passed to the membranes. They were retained there, and the dilatation persevered in for 15 or 20 minutes. By this manipulation, two or three slight but distinct propulsive pains were produced. Pain continued after this more or less for three hours, but with no further bearing down. 10 P. M., os uteri more dilatable, and accompanied with some shortening of the cervix. Membranes easily felt, and, by the ballottement, what I suppose to be the head of the child.

"The dilatation now seemed to be sufficient to warrant the exhibition of the ergot—ten grains were accordingly given in decoction.

"24th. Patient reports violent pains in the back, loins and hips all night. None in abdomen. These pains have now abated and she is quite easy. Dilatation increased a little. Directed her to rest until 2 o'clock, and then to take 5 grains of ergot, and to repeat the same dose at 5 P. M. Regular propulsive pains came on at 6 o'clock, and continued until the labour was safely accomplished at 1 A. M. The infant was a lively boy, weighing 6½ lbs. The waters were not discharged until a little after midnight. The head, notwithstanding its small size, and in spite of remarkably strong pains, was firmly lodged in the narrowed upper strait for an hour and a half after the os uteri was well dilated, and showed marks of severe treatment during its passage. It was not at all ergotized.

"Dec. Mother and child well.

"In this case, I believe either of the methods usually practised would have been unsuccessful. If the membranes had been ruptured at first, the head would have fallen into the upper strait, and the child fallen a victim to its fatal compression there.

"If ergot alone had been given, either the object would not have been accomplished, or some grievous injury might have been inflicted on the mother. It is a very good rule in natural labour, 'not to give ergot until the os uteri is well dilated.' How much more should it be observed in these cases where *no* effort of nature has been made, and where labour has not even commenced!

"At any rate, the method adopted in this instance seemed to produce results nearly allied to those produced by nature herself, in carrying forward the same operation at the full period."—*New England Quarterly Journal of Medicine and Surgery*, April, 1843.

Strangulated Intestine from Rotation of the Sigmoid Flexure of the Colon. By Jacob Bigelow, M. D.—The Hon. Hugh S. Legare, Attorney-general of the United States, arrived in Boston on Friday, June 16th, and although fatigued by a hasty journey from Washington, was well enough to make calls on some friends in the evening. At 1 o'clock in the night he was seized with frequent abdominal pains, resembling those of colic, and called Dr. Thomas, of Washington, then lodging in the same hotel, to his assistance. During the remainder

of the night, and the whole of the next day and night, he was affected with pains alternating with intervals of ease, without constitutional disturbance, and agreeing in character with those of previous attacks to which he had been liable for more than two years, the last occurring in March preceding. Various laxatives and enemata were resorted to, together with counter-irritants, but without removal of the constipation and pain.

Early on Sunday morning I was called to meet Dr. Thomas at Mr. L.'s lodgings at the Tremont House. I found him then suffering frequent paroxysms of pain, which he referred mostly to the lower abdomen, without distinction of side, but which sometimes mounted above the umbilicus. The pulse was at this time 60, the skin natural, with no tenderness on deep pressure of the abdomen in any part, no meteorism, no nausea. Opiates and other remedies were proposed to him, but declined, on the ground that laxatives and mechanical means had relieved his former attacks. During the morning two doses of Epsom salt, with infusion of senna and tincture of hyoscyamus were given, with frequent enemeta both aqueous and stimulating, without effect. The pains did not increase, but a troublesome degree of tenesmus made it necessary to suspend the enemata. Elastic tubes were passed throughout the rectum, and water injected through them in the manner recommended by Dr. O'Beirne, but they could not be carried into the sigmoid flexure. His strength meanwhile remained good and his general condition stationary.

At 6 P. M. he was removed without difficulty to the house of a friend, where he was immediately put into a warm bath of 106 deg., from which he expressed great relief and satisfaction. He was then put to bed, and 60 drops of laudanum were administered in two doses. In about an hour, the relief not being perfect, 40 drops of McMunn's elixir of opium were given, soon after which he fell into a quiet sleep, and so remained for about three hours. Conditional directions were given for repeating the opiate, but it was not found necessary till near morning, when he took 20 drops of the elixir and slept an hour or two more. On Monday morning at 5 o'clock, I found him more comfortable than before, skin temperate, pulse 64, abdomen not tender but beginning to be tympanitic. Castor oil and senna, with hyoscyamus, were now given and retained, and enemata, fomentations and sinapisms were resumed as before. The pain did not return with the same severity as before, but meteorism rapidly increased, with restlessness and tenderness on pressure. At 9 A. M. the pulse was 80, and before 12 it was 100. The face of things having become very serious, Dr. Thomas being absent from the city, I requested farther consultation, and Dr. Warren was called in. The abdomen was freely leeched and rubbed with croton oil. Various ineffectual attempts were made to overcome the obstruction of the intestine by the introduction of various tubes, by inflation of the rectum with a bellows, and by the tobacco injection administered twice. Under this last remedy he said he felt excited, was stronger but more agitated, and his pulse rose from 130 to 140, with increased force. Each injection contained half a drachm in infusion, and was retained nearly half an hour without narcotism or prostration. During the night the patient was restless, retaining his muscular strength in a considerable degree, and frequently getting up to the close stool in the belief of an approaching evacuation. There was never any vomiting nor nausea; the mind was clear, and the natural decisive tone of voice continued. He complained occasionally of a sense of burning at the epigastrium and upper abdomen. About half an hour before death he got up without assistance, and on lying down asked urgently for water. On receiving it, he pushed it away, saying it was filled with ants. A white paper was then shown him, to which he applied the same remark. On being told it was an illusion of sight, he put forth his hand for the glass, but missed it, said a few words incoherently, leaned back, and expired quietly at half past five.

Autopsy seven hours after death.—Externally the limbs were very rigid, and there was much lividity about the head and back. The abdomen was greatly distended. On laying it open the cavity seemed nearly filled by the sigmoid flexure of the large intestine, which extended across the abdomen into the right hypochondrium, and was in a state of such distension, that its external circum-

ference was in one place fifteen inches. It had a dusky green colour, as if from commencing gangrene, but there seemed to be no softening, nor diminution of the natural polish. The two extremities of the flexure connected with the colon above, and rectum below, were felt to be twisted together about the mesentery as an axis, into a firm cord or neck, about an inch in diameter; and on being carefully untwisted, the whole included portion was found to have made four turns, or two entire revolutions upon itself. There was no line of demarcation between the healthy and strangulated portions, nor was there any appearance externally of old disease about this part. The small intestine and the colon were moderately distended, but the rectum was rather contracted. The cavity of the peritoneum contained a small quantity of turbid reddish fluid, and in one place there was recent lymph upon the small intestine, but there were no other appearances of inflammation. Owing to the state of the body and the place of examination, the intestine was not opened, and no further dissection made.

Remarks.—Internal strangulation, we have reason to believe, is a fatal disease except in rare instances in which a spontaneous restoration of the parts may under favourable circumstances have taken place. But the resources of art are for the most part unavailing, from our ignorance at the time, of the nature and place of the lesion, and from the inaccessible situation of the part, unless by a dangerous operation, not to be justified under any diagnosis which can be seasonably made out. Among the various causes known to have occasioned strangulation, the rotation or twisting of the intestine is less common than some others. Yet in addition to the case which has now been described, two others have occurred in this city, under the observation of Drs. Homans and J. B. S. Jackson, the record of which I have seen, in which fatal strangulation occurred from the torsion or twisting of the sigmoid flexure.

Professor Rokitansky, of Vienna, in a work on internal strangulations of the intestines, divides these lesions into three species. Of these, the second species consists in the rotation of one part round an axis most commonly formed by some other part. It appears to be the result of his experience that rotation round the mesentery as an axis can happen only to the small intestine.* But it appears from the case above detailed, and the two others alluded to, that the large intestine is capable of undergoing this rotation, and from its anatomical position, no part seems more exposed to this change of situation than the sigmoid flexure.

From remarks made by Mr. Legare during his illness, it is believed that in some of his former attacks of colic and constipation, relief was obtained by the introduction of the elastic tube beyond the seat of the stricture. This happy result is to be ascribed to the spasmodic character of the obstruction then existing. But when the intestine is rendered impervious by mechanical strangulation, it is evident that an instrument would sooner perforate the coats of the canal, than admit of being forced through the closed and tortous passage. In the present case, tubes, some of which were two feet in length, were introduced into the rectum, and water injected through them continually to facilitate their progress. But the more flexible tubes were bent into a coil in the rectum, and the more rigid ones were irresistibly stopped at the sigmoid flexure, and could not be further forced without danger of perforating the intestine, an accident well known to have followed injudicious and violent efforts.—*Boston Medical and Surgical Journal*, July 5, 1841.

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Retained Placenta—Perforation of the Uterus. The following interesting case of retained placenta, followed by perforation of the uterus and death, was communicated to the Boston Society for Medical improvement, on the 26th December last. By D. Humphreys Storer, M. D.

"On the 7th instant, at 5 A. M., Mrs. G., aged 21 years, after a labour of a few hours, was delivered of her first child. It was very small, and I should judge not to be more than eight months grown.

* British and For. Med. Review, III. 496, 498.

"The uterus contracted well, but the placenta not being readily detached, I examined and found it firmly adherent, high up, to the uterus. After waiting several hours for its expulsion, I made an unsuccessful attempt to remove it by the hand. A small portion only was brought away. During the evening of the first day, my patient was seen by another practitioner, who also attempted to remove the placenta, with no greater success than myself, he being able to remove only a small portion, of the size perhaps of an *olive*. For the three first days my patient's symptoms caused me no alarm. During this period I administered ʒi. of ergot, in divided doses, and gave a cathartic of castor-oil. The lochia appeared, and continued to flow, and her breasts secreted milk. No pain nor difficulty was complained of—and although I visited my patient morning, noon, and evening, of each day, it was with the hope of learning that the placenta had been thrown off, and not with the expectation of finding her more sick.

"On the morning of the 10th inst., the commencement of the fourth day, I found the *pulse* had risen from 84 (which they were at 10 o'clock the previous evening) to 140. The *abdomen* was tympanitic, and pressure upon it produced considerable uneasiness; while *distinct pain* was caused in the uterus by the application of external force. The lochia and milk had disappeared, the respiration was hurried, and the countenance was distressed.

"Here was *peritonitis*—but how should I proceed? As in ordinary cases of this disease? What would be gained by *general bleeding?* The irritating cause would still be in the uterus, however much temporary benefit might be produced. I was unwilling to act alone—and Dr. Channing, in a few moments after my morning visit, saw my patient with me. He examined the uterus, but could remove nothing. After carefully investigating the case, he suggested the application of ten leeches over the region of the uterus, a hot Indian poultice to the remainder of the abdomen, and the continuance of injections of chloride of soda, which had been previously used, into the vagina. She seemed relieved during the afternoon—a Dover's powder was exhibited at night. In the morning she was decidedly better; the abdomen was less affected by pressure, and was less swollen; the pulse had fallen to 100; she had slept and perspired freely during the night. At noon of this, the 5th day, she was still more relieved, and could I have forgotton that the placenta was still in the uterus, I should really have felt that my patient would yet do well. In the afternoon of this day her pain gradually returned, and during the night it was mitigated only by opium. On the morning of the 6th day I found her in the greatest distress; the pain was intense. The tympanitis had greatly increased, and the respiration was laboured. During the whole forenoon of this day she suffered from constantly returning pains, after a longer or shorter intermission, which increased in their severity until they could scarcely be borne. These pains might readily be mistaken by a by-stander for labour pains. In the afternoon of this day her pains suddenly ceased, and did not again return; the distension of the abdomen increased, the respiration became more laboured, the pulse rose to 160, and she died the next evening.

"Upon examining the body after death, the fundus of the uterus was found to be in a state of ulceration, and projecting through it into the abdominal cavity, was seen a large portion of the placenta—the remainder still being contained within the cavity of the uterus. The body and neck of the uterus were not disorganized.

"The results of the two cases I have repeated to this Society show how great are the dangers to be feared from a retained placenta. In both cases I followed the advice of Blundell, and the dictates of my common sense—"to leave the placenta in the uterine cavity if it could not be removed without the risk of bruising or lacerating the uterus, not because it is not an evil to leave it there, but because to leave it in the uterus is a smaller evil than to abstract it with violence, and we had better abide by the smaller evil than expose ourselves to the greater evil, that of lacerating, bruising and killing."

"And in both cases the results were peculiar, and I feel could not have been averted.

"In the former case *tetanus* ensued.

"In the latter case, after the placenta had been retained for three days, attached to the fundus of the uterus, inflammation commenced—the parietes of the fundus became disorganized, and (probably on the 6th day) during a succession of severe uterine pains, gave way, and the placenta was partially protruded through them into the abdomen."—*N. E. Quart. Journ. Med. & Surg.*, April, 1843.

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Spina Bifida successfully treated by repeated Punctures.—The following case of successful treatment of spina bifida, by Dr. Alexander Stephens, is recorded in the second No. of the *New York Journal of Medicine and the Collateral Sciences.*

"October 17th, 1837.—An infant daughter of Mr. Leach, of Skeneateles, eight months old, was operated on by Dr. Stephens this morning for spina bifida. The tumour was seated over the upper part of the sacrum, about three and a half inches broad from side to side, nearly the same in a vertical direction, and rising about two inches above the surrounding surface, indented along the middle vertically by a thick irregular band of integument. The covering of the tumour was not healthy skin, but a peculiar thin membrane of a reddish colour, traversed by numerous vessels like varicose capillary veins. The healthy integument formed a hard edge at its line of union with the covering of the tumour. The whole swelling was somewhat pendulous, narrower at its base than about the middle, and in size held about the same relation to the size of the infant, as it did at the time of birth. It had been once punctured with a needle, when the child was only a few weeks old. The wound, which had never cicatrized fairly, is now covered with a sort of scab.

"In the operation to-day it was punctured with an iris knife, and about four ounces of clear serum tinged with a few drops of blood, issued from the puncture in the integuments. The child did not appear to suffer any inconvenience from the evacuation of serum, but it produced a slight sinking at the anterior fontanelle. The child's general health is good. There did not appear to be any deficiency of bone about the outer portion of the base of the tumour. The healthy integument mounted a few lines above the base, before giving place to the peculiar envelope above noticed.

"*October 20th.*—The tumour was again tapped on the right side. Not more than an ounce of serum escaped.

"*October 21st.*—The tumour was again punctured in three places along its lower edge on the verge of the sound skin. About four ounces of serum escaped without any bad symptoms. The tumour is now somewhat shrivelled, but the diminution does not appear equal to the amount of fluid evacuated.

"*October 30th.*—The fluid continued to ooze slowly for nearly twenty-four hours after the last punctures. Since that period, the child has been drooping and fretful, with some febrile symptoms, perhaps partly owing to her teeth. Recently, the sac of the tumour has become inflamed; and within two days, the child has been observed to keep her left leg drawn up, and to cry when it was disturbed. She has taken little or no medicine, excepting a slight dose of magnesia. The tumour is kept wet with a spirit-lotion. The anterior fontanelle is considerably depressed.

"The tumour was not punctured afterwards. The febrile symptoms and spasm of the muscles, soon subsided; and in a few days, the little patient returned with her parents to the country. At a second visit to the city in the spring, or summer following, the child was again presented to us for examination. The sac of water had disappeared, and all that remained of it, was a small bunch of indurated and corrugated integument.

"I think it important to state, that the fluid in the sac was discharged very slowly; at the rate of about three drops in a second, while about one-third of it was left behind; that slight pressure was made upon the tumour after each evacuation, and as far as was practicable in a restless child, maintained there; and that strict injunctions were given to keep the body in a horizontal position. Once,

when the head was suddenly elevated, soon after the tumour had been evacuated, a tendency to syncope and spasm was manifested, which disappeared as soon as the child's head was depressed.

Remarks.—Considering the analogy between spina bifida and hydrocele of the tunica vaginalis testis, and other serous sacs, we may anticipate a thickening and induration of the sac, with a corresponding degree of contraction in the former case, as well as in the latter. The desideratum then is, to open the sac and draw off the fluid safely. This leads to the inquiry—What are the dangers of the operation?

The first danger is the producing of syncope and spasms, by the too sudden removal of the pressure of the fluid upon the serous cavities in the ventricles and spinal marrow. The means of obviating this danger are, drawing the water off slowly, leaving some in the sac undischarged, keeping the patient in a horizontal position, and if necessary, making pressure upon the tumour and upon the head. With these precautions and resources, this danger cannot be deemed a formidable one.

The next danger of which I shall speak, is the occurrence of inflammation of the inner lining of the sac, extending peradventure to the spine and cerebral cavities. There was a period of two or three days of restlessness and feverishness in Mr. Leach's child, which I attributed to this cause, but which disappeared without any particular treatment. Of course, no prudent surgeon would repeat the puncture, until the effects of the previous operation had subsided.

The next question of which I shall speak, is of an entirely different kind, and I infer the possibility of it only from analogy, reasoning from what occurs in some cases of paracentesis abdominis; that is, an habitual increased secretion produced by repeatedly drawing off the water. I should judge, that such a state of things was to be obviated by increasing the degree of inflammation, and of course the thickening and contraction of the sac, after each puncture, by pressure sufficient for the purpose.

These considerations lead me to conclude, that the puncture of spina bifida may be made with very little danger and a fair prospect of success.

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Measurements of the Fœtal Cranium.—At the Celebration of the Hundredth Anniversary of the American Philosophical Society, Dr. Charles D. Meigs read an interesting communication on the measurements of the fœtal cranium, and presented a tabular statement of the measurements of one hundred and fifty heads of children, born *at term*, in the city of Philadelphia. It appeared from this:—

1. That the sum of his measurements of the occipito-frontal diameter was 729 inches, 7 lines; the mean 4 inches, 10 lines.

2. That the sum of his measurements of the bi-parietal diameter was 586 inches, 7 lines; the mean 3 inches, 11 lines.

3. That in 52 children, the occipito-frontal diameter was more than 5 inches, in 11 it was 5.1, in 8 it was 5.2, in 3 it was 5.3, in one 5.4, in one 5.6, in two 5.7, and in one 5.10.

4. That in 68 the bi-parietal diameter exceeded 4 inches, in 19 it was 4.1, in five 4.2, in six 4.3, in three 4.4, in one 4.5; in only one case was it less than 3.6: in that it was 3.4.

5. That the mean horizontal circumference of the head was 13.8, and the small or perpendicular circumference 11.5.

Dr. Meigs concluded with remarking, that perhaps in an ethnographical relation his measurement might possess a certain interest. It would be curious to preserve, from century to century, some accurate registers of the kind; and he ventured to hope, that upon many succeeding centennial sessions of the American Philosophical Society future members might be induced to present similar records.—*Proceedings of the American Philosophical Society.*

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UNIVERSITY OF PENNSYLVANIA.

MEDICAL DEPARTMENT.—SESSION 1843-44.

The Lectures will commence on Monday, the 6th day of November, and be continued, under the following arrangement, to the middle of March ensuing:—

Practice and Theory of Medicine,	by NATHANIEL CHAPMAN, M. D.
Chemistry,	" ROBERT HARE, M. D.
Surgery,	" WILLIAM GIBSON, M. D.
Anatomy,	" WILLIAM E. HORNER, M. D.
Institutes of Medicine,	" SAMUEL JACKSON, M. D.
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Clinical Medicine,	by W. W. GERHARD, M. D.
Clinical Surgery,	" Drs. GIBSON and HORNER.

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W. E. HORNER, M. D.,

Dean of the Medical Faculty, 263 Chestnut Street, Philadelphia.

OCT. 1st, 1843.

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W. E. HORNER, *Secretary.*

OCT 1st, 1843.

JEFFERSON MEDICAL COLLEGE.

SESSION OF 1843-44.

The regular Course of Lectures will commence on Monday the 6th of November, and end on the last day of February.

ROBLEY DUNGLISON, M. D., *Professor of Institutes of Medicine, &c.*

ROBERT M. HUSTON, M. D., *Professor of Materia Medica and General Therapeutics.*

JOSEPH PANCOAST, M. D., *Professor of General, Descriptive, and Surgical Anatomy.*

JOHN K. MITCHELL, M. D., *Professor of Practice of Medicine.*

THOMAS D. MÜTTER, M. D., *Professor of Institutes and Practice of Surgery.*

CHARLES D. MEIGS, M. D., *Professor of Obstetrics and Diseases of Women and Children.*

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Dean of the Faculty.

TRANSYLVANIA UNIVERSITY, MEDICAL DEPARTMENT.

The course of instruction will open, as heretofore, on the 1st Monday of November, and close on the last day of February, under the following faculty, viz:

Benj. W. Dudley, M. D., Professor of Anatomy and Surgery;
James C. Cross, M. D., Professor of Institutes and Medical Jurisprudence;
Elisha Bartlett, M. D., Professor of Theory and Practice;
Wm. H. Richardson, M. D., Professor of Obstetrics and Diseases of Women and Children.
Thos. D. Mitchell, M. D., Prof. Mat. Medica and Therapeutics, and Dean of Faculty.
Robert Peter, M. D., Professor of Chemistry and Pharmacy;
James M. Bush, M. D., Adjunct Professor of Anatomy and Surgery;

who will receive notes of good and solvent banks of the states whence the pupils come, without discount, for their several tickets, the aggregate sum of which is $105. For the Matriculation and Library ticket of $5, and the Graduation Fee of $20, par funds are required. Boarding and Lodging, as heretofore, for two to three dollars per week. By order,

Thomas D. Mitchell, *Dean.*

Lexington, Ky., *June 1st*, 1843.

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The regular course of Lectures in this institution will be resumed on the second Monday in November.

Anatomy, - - - - - - - -	by T. E. Holbrook, M. D.
Surgery, - - - - - - - -	" E. Geddings, M. D.
Institutes and Practice of Medicine, - -	" S. Henry Dickson, M. D.
Physiology, - - - - - - -	" James Moultrie, M. D.
Materia Medica, - - - - - - -	" Henry R. Frost, M. D.
Obstetrics, - - - - - - - -	" Thomas G. Prioleau, M.D.
Chemistry, - - - - - - -	" C. U. Shepard, M. D.

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Thomas Miller, M. D., *Professor of Anatomy and Physiology.*
Jno. M. Thomas, M. D., *Professor of Materia Medica and Therapeutics.*
Frederick Hall, M. D., LL. D., *Professor of Chemistry and Pharmacy.*
Wm. P. Johnston, M. D., *Professor of Surgery.*
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Washington, June 1st, 1843.

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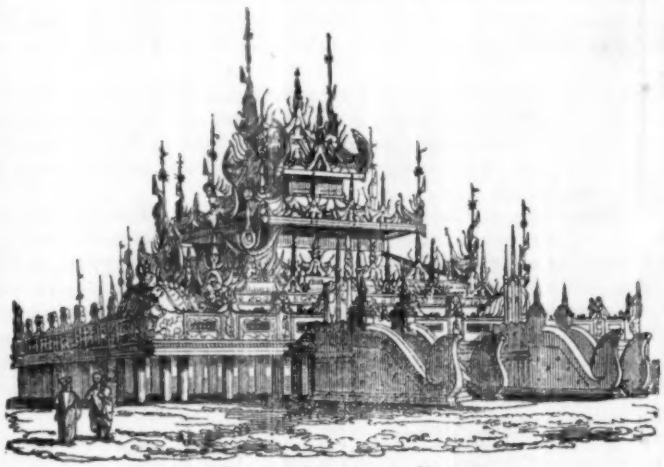

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than flowing. At the new and full moon the tides attain the greatest height, and the interval between two high waters is least, viz. $12^h\ 19^m\ 28^s$. At the quarters of the moon the tides are the least, and the intervals the greatest, viz. $12^h\ 30^m\ 7^s$. The time of high water is mostly regulated by the moon; and in general, in the open sea, is from two to three hours after that planet passes the meridian, either above or under the horizon. On the shores of large continents, and where there are shallows and obstructions, great irregularities take place in this respect; and when these exceed six hours, it may seem as if the high water preceded the moon's passage over the meridian. Though the tides seem to be regulated chiefly by the moon, they appear also in a certain degree to be under the influence of the sun. Thus, at the syzigies, when the sun and moon come to the meridian together, the tides, every thing else considered, are the highest. At the quarters, when the sun and moon are 90° distant, the tides are least. The former are called the *spring*, the latter the *neap* tides. The highest of the spring tides is not that immediately after the new or full moon; but is in general the third, and in some cases the fourth. The lowest of the neap tides occurs much about the same time after the quarters. The total magnitude of the tide is estimated by the difference between the heights of high and low water. The higher the flood tide rises, the lower the ebb tide generally sinks on the same day. At Brest, the medium spring tide is about 19 feet, and the mean neap tide about 9. On other parts of the coast of France opposite to England, the waters, being confined, rise to a great height, and do so on both sides of the Channel. At St. Malo it is from 45 to 50 feet. Nearly as high tides occur at Annapolis Royal, in Nova Scotia. It is the obstruction which the land presents to the motions of the waters which occasions tides of any consequence at all: were the globe entirely covered with water, the tides would be very insignificant. Thus, in the Pacific Ocean, the spring tide amounts only to 5 feet, and the neap to from 2 to 2.5 feet. On the other hand, a free communication with the ocean is indispensable, to produce a high tide. Thus, in inland seas, the tides are very trifling, because the luminaries act nearly equally over the whole surface at the same time.

The height of the tide increases as the sun or moon is nearer the earth, but in a higher ratio. The rise of the tides is likewise greater when the sun or moon is in the equator, and less as they decline from it. When the observer and the moon are on the same side of the equator, the tide which happens when the moon is above the horizon is greater than when she is below it. The reverse occurs when the observer and the moon are on opposite sides of the equator. If the tides be considered relatively to the whole globe and to the open sea, it appears that there is a meridian about 30° eastward of the moon, where it is always high water, both in the hemisphere where the moon is and in the opposite. On the west side of this circle the tide is flowing; on the east it is ebbing; and on the meridian, which is at right angles to the same, it is everywhere low water. These meridian circles move westward, keeping nearly at the same distance from the moon: only approaching nearer to her when new or full, and withdrawing at the quarters. In high latitudes the tides are very inconsiderable. It is probable that at the poles there are no diurnal tides; but there is some ground for thinking that the water will rise higher at the pole to which the luminaries are at any time nearest, than at the opposite.

The great wave which follows the moon as above described, and constitutes the tide, is to be considered as an undulation or reciprocation of the waters of the ocean; in which there is, except when it passes over shallows or approaches the shore, very little progressive motion. In all this we are as yet overlooking the operation of local causes, winds, currents, &c., by which these general laws are modified, overruled, or even reversed. Most people find little difficulty in conceiving how the waters should rise on the side of the globe which is next the moon; but there can scarcely be a harder task than bringing many to see *why the waters should at the same time rise on the side which is turned from the moon.* We must, however, confine ourselves to a very brief and palpable explanation. The force by which the moon draws any particle of our globe towards her is greater when it is nearer to her, and less when more remote. The force, therefore, with which the moon attracts the particles on the side nearest her is greater than the average force which she exerts on the whole globe. These particles, therefore, rise or endeavour to come near the moon. On the other hand, the force by which the moon draws the particles which are farthest from her being less than the average force, these particles endeavour to recede from the moon, and in so doing they also recede from the earth's centre; that is, they rise higher than the general level. The action of the sun is similar to that of the moon; but his being almost four hundred times as distant, greatly diminishes his effect. At the new and full moon the luminaries act together, and produce *spring* tides. The highest of all are a little after the autumnal, and before the vernal, equinox; and the least spring tides occur a little after the solstices. At the quarters of the moon her action is opposed by that of the sun, and therefore *neap* tides are the result.

The time of high water deserves consideration. The preceding is sufficient to show that the phenomena of the tides are effects that might be expected from the principle of attraction or gravitation; but since the waters necessarily occupy some time in moving from one

manders have been recently discovered, and the celebrated Siren is an inhabitant of the muddy lakes of Georgia and Carolina; this singular reptile had long perplexed naturalists, some thinking it a tadpole, or imperfect frog; it is now, however, fully ascertained to be an adult animal.

The ichthyology of this great region has been but imperfectly examined, although its seas, lakes, and rivers swarm with a great variety of delicious fish. The Cod (*fig.* 1107.), so well known in commerce, are found only in the northern seas. Their great rendezvous is on the banks of Newfoundland, and other sand-banks that lie off the coasts of the Northern States; these situations they prefer, by reason of the quantity of worms produced in those sandy bottoms, which tempt them to resort there for food. Some conception may be formed of their amazing fecundity, from the fact that nearly 10,000,000 eggs have been counted in a codfish of a moderate size. The Mackarel and Alewife of our coasts also give employment and food to great numbers of persons.

1107

Codfish.

1108

Shad.

Nearly allied to the latter is the Shad (*fig.* 1108.), which is taken in nearly all our rivers in the spring, when it ascends them to spawn in the shallow waters. It is larger than the herring, weighing from five or six to ten or twelve pounds. It is taken in large quantities, and in the season is highly esteemed; but in the autumn, or when caught at sea, it is dry, and of a disagreeable flavour. The Salmon is also taken in the rivers in the spawning season, but it is confined to the colder climates.

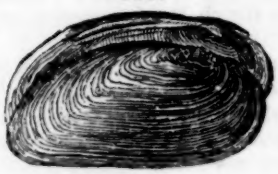
Among the fish of the interior lakes, one of the most esteemed is the White Fish, or Tittameg of the traders (*Coregonus albus*) (*fig.* 1109.). It weighs from three or four to ten or twelve pounds, and seems to be found in all the lakes, from the great Canadian chain to the Arctic seas. It is a delicious article of food, and nearly 900 barrels have been taken at a single place in Lake Superior, in a season. It is taken from April to June, when it is in the best condition, and also in October and November.

1109

White Fish.

The rivers and lakes abound with a surprising number of Bivalve shells, exhibiting on their internal surface a lustre nearly equal to the oriental pearl counters, and other ornaments made from the pearl oyster; they do not, however, appear to have been turned to any other account than the making of sleeve buttons. The *Unio complanatus* (*fig.* 1110.) of Solander, is usually of a fine purple inside, and several other species have the same character. The great variety of form, the various shades of colour, and the exterior beauty, some being furnished with tubercles, others with folds or rays, have caused them to be eagerly sought after by naturalists of all countries, for their cabinets. The Ohio and its tributaries are particularly rich in possessing a vast number of species, and we are greatly within bounds, when we say that more species have been described from them than from all the rivers of Europe, Asia, and Africa together. The number of different species in the rivers and lakes east of the Alleghany Mountains, bears no comparison with that from the west of them, and the dividing ridge of this great chain seems almost as completely to divide the shells as it does the waters. There are but three or four known species which are common to both waters. This may be considered a remarkable feature in the geographical distribution of animals. Some writers have hazarded the opinion, that they are all mere varieties

1110



Unio complanatus.

1111

Unio Pustulosus.

1112

Unio Shepardianus.

1113

Io spinosa

of one species. A glance at two of the figures, Unio pustulosus (*fig.* 1111.), and Unio Shepardianus (*fig.* 1112.), two shells described by Mr. Lea in the American Philosophical

385

Temple of Giants.

386

Temple of Concord.

Farther to the east at Selinunti, the ruins of Selinus present a scene still more striking and awful. Here may be distinctly traced three noble temples, of which the materials still remain, but only a few solitary columns are standing; all the rest lie on the ground, in huge and shapeless blocks, forming the most stupendous mass of ruin to be found in Europe. It is generally supposed that an earthquake has been the cause of this extraordinary destruction, — that, as Mr. Swinburne expresses himself, nature has been chiefly concerned in this triumph over the pride of art (*fig.* 387.).

387

Ruins of Selinus.

Trapani, the ancient Drepanum, poetically distinguished as the place where Anchises died, and where Æneas celebrated his obsequies, is still a considerable town, near the western promontory of Sicily, the ancient Lilybæum. It is well fortified, and has a good harbour, where there is a considerable trade in the export of salt made in its vicinity, and of barilla. It carries on briskly the fisheries of tunny and of coral, which last is obtained both from the coast of the island and that of Africa. Not far from Trapani is Segeste; a simple, grand, and almost entire edifice, standing on a solitary hill (*fig.* 388.). Marsala, almost on the very site of Lilybæum, is a considerable town, exporting wine that is much esteemed. Near it the quarries of Mazzara appear to have furnished the stone of which the edifices in this part of Sicily have been constructed.

388

Temple of Segeste.

The ascent of Etna is a general object with Sicilian travellers. In proceeding from Catania, they pass through three successive zones: first that of rich cultivated fields, then that of plants and aromatic shrubs; and, lastly, the region of scoriæ, ashes, and perpetual snow. On reaching the summit (*fig.* 389.), they view the crater filled with vast volumes of smoke, and obtain a fine panoramic view over all Sicily and the adjoining shores of Italy.

389

Summit of Etna.

The Lipari Islands, twelve in number and situated from twelve to thirty-five miles northward from the Sicilian coast, are entirely volcanic, and appear to have been thrown up from the sea by the action of fire. Lipari itself contains a hill of white pumice, which forms an article of trade, and its crater displays various specimens of beautifully crystallised sulphur. Stromboli has a volcano, remarkable for being in perpetual activity. Every day, at short intervals, the eruptions issue forth like great discharges of artillery, and the sides of the mountain are covered with the red-hot stones that are ejected, and rush down into the sea. The inhabitants of these islands are a bold, active, and industrious race. The activity of submarine fires has been manifested on another side of Sicily, by the recent rise of Graham's Island, only, indeed, a volcanic rock, which has again sunk under water.

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